

RECEIVED

AgSht3-27-2006

CITY OF SPOKANE



AGENDA SHEET FOR COUNCIL MEETING OF: ^{April 3,} March 27, 2006

MAR 23 2006

CITY CLERK'S OFFICE

SPokane, WA

Submitting Dept.
Planning ServicesContact Person/Phone No.
Jo Anne Wright 625-6017City Council Sponsor
Al French**ADMINISTRATIVE SESSION**

- ☐ Contract
- ☐ Report
- ☐ Claims

LEGISLATIVE SESSION

- ☐ Emergency Ord
- ☒ Resolution
- ☐ Final Reading Ord
- ☐ First Reading Ord
- ☐ Special Consideration
- ☐ Hearing

CITY PRIORITY

- ☐ Communications
- ☐ Economic Development
- ☒ Growth Management
- ☐ Human Services
- ☐ Neighborhoods
- ☐ Public Safety
- ☐ Quality Service Delivery
- ☐ Racial Equity/Cultural Diversity
- ☐ Rebuild/Maintain Infrastructure

CLERK'S FILE

RENEWS

CROSS REF

ENG

BID

REQUISITION

Neighborhood/Commission/Committee Notified:

Action Taken:

OPR 2005-0881

STANDING COMMITTEES

(Date of Notification)

- ☐ Finance
- ☐ Neighborhoods
- ☒ Planning/Community & Econ Dev March 9, 2006
- ☐ Public Safety
- ☐ Public Works

AGENDA**WORDING:**

(incl contract term)

In accordance with the terms of SMA Grant #G00600243 the City has prepared a Public Participation Plan for the 2006-2007 Shoreline Master Program Update.

BACKGROUND:

(attach additional sheet if necessary)

The City has a \$220,800 grant from the Washington State Department of Ecology to update the City's 1975 Shoreline Master Program. In accordance with the terms of this grant the City has prepared a Public Participation Plan. This Public Participation Plan identifies the various opportunities for public involvement that will be provided throughout the 2006-2007 Shorelines Master Program Update. This plan was developed to meet the early and continuous public participation goal in WAC 365-195-600. It also lays out how the City will comply with RCW 90.58.130, RCW 36.70A.140, and meet the requirements of WAC 173-26-100. The budget for this process will not exceed \$5,000 of the Grant funds.

RECOMMENDATION:

Adopt

Fiscal	X N/A	Budget	X N/A
<input type="checkbox"/> Expenditure: \$		#	
<input type="checkbox"/> Revenue: \$		#	
<input type="checkbox"/> Budget Neutral			

ATTACHMENTS: Include in Packets: Public Participation Plan for the 2006-2007 Shoreline Master Program Update, Resolution # _____

On file for Review in Office of City Clerk: SMA Grant Agreement No. G0600243

SIGNATURES:

Steve Franks
Department Head

[Signature]
Legal

[Signature]
Division Director

[Signature]
Deputy Mayor for Mayor

[Signature]
Finance MRL

Alexander J. Hogan, Jr.
Council President

DISTRIBUTION:

Jo Anne Wright, Planning
James Richman, Legal
John Pilcher, Economic Dev.
Steve Franks, Planning

COUNCIL ACTION:

ADOPTED BY
SPOKANE CITY COUNCIL:

April 3, 2006
[Signature]
CITY CLERK

RES 2006-0036

RES 2006-0036

RESOLUTION NO. 2006-0036

A RESOLUTION ADOPTING A PUBLIC PARTICIPATION PLAN FOR THE 2006-2007 SHORELINE MASTER PROGRAM UPDATE

WHEREAS, the Washington State Legislature passed the Shoreline Management Act (SMA) in 1971 requiring, among other things, the development of a Shoreline Master Program for cities such as Spokane; and

WHEREAS, the City of Spokane adopted a Shoreline Master Program in March, 1976 and subsequently amended the program in June, 1982 to comply with the requirements of the Shoreline Management Act; and

WHEREAS, the City of Spokane must take legislative action to update its Shoreline Master Program to ensure the program complies with the new 2003 Shoreline Master Program Guidelines requirements of the SMA (RCW 90.58, and WAC 173-26); and

WHEREAS, the update of the City of Spokane Shoreline Master Program must be completed on or before December 1, 2013, pursuant to the timetable mandated in RCW 90.58.080; and

WHEREAS, the Washington State Department of Ecology in 2003 began providing grants to encourage jurisdictions to update their Shoreline Master Programs in advance of their mandated completion dates (RCW 90.58.080); and

WHEREAS, the City of Spokane in 2005 sought and received a grant, No. G0600243, from the Washington State Department of Ecology to update the City's Shoreline Master Program; and

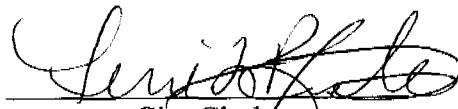
WHEREAS, the City of Spokane must establish and broadly disseminate to the public a public participation program consistent with RCW 90.58.130 that identifies procedures and schedules whereby updates, proposed amendments, or revisions, are considered by the governing body; and

WHEREAS, on March 8, 2006, the Spokane Plan Commission voted to forward to the City Council a recommendation of approval of the Public Participation Plan for the Shoreline Master Program Update;

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL FOR THE CITY OF SPOKANE THAT IT HEREBY ADOPTS the Public Participation Plan for the 2006 Spokane Shoreline Master Program Update.

SHAPING SPOKANE VOLUME III, APPENDIX A

ADOPTED by the City Council this 3rd day of April, 2006.


City Clerk

Approved as to form:


Assistant City Attorney



PUBLIC PARTICIPATION PLAN
FOR THE
2006-2007 SHORELINE MASTER PROGRAM UPDATE

INTRODUCTION

The City of Spokane Shoreline Master Program (SMP) Update takes its direction from RCW 90.58, the Shoreline Management Act (SMA). The SMA was revised in 2003. The City shall meet or exceed the participation goals and requirements of this act (RCW 90.58.130 & RCW 36.70A.140). In compliance with these directives, the City will, at a minimum, meet the following requirements (WAC 173-26-100):

- (1) Conduct at least one public hearing to consider the draft proposal;
- (2) Publish notice of the hearing in one or more newspapers of general circulation in the area in which the hearing is to be held. The notice shall include:
 - (a) Reference to the authority(s) under which the action(s) is proposed;
 - (b) A statement or summary of the proposed changes to the master program;
 - (c) The date, time, and location of the hearing, and the manner in which interested persons may present their views; and
 - (d) Reference to the availability of the draft proposal for public inspection at the local government office or upon request;
- (3) Consult with and solicit the comments of any persons, groups, federal, state, regional, or local agency, and tribes, having interests or responsibilities relating to the subject shorelines or any special expertise with respect to any environmental impact. The consultation process should include adjacent local governments with jurisdiction over common shorelines of the state;
- (4) Where amendments are proposed to a county or regional master program which has been adopted by cities or towns, the county shall coordinate with those jurisdictions and verify concurrence with or denial of the proposal. For concurring jurisdictions, the amendments should be packaged and processed together. The procedural requirements of this section may be consolidated for concurring jurisdictions;
- (5) Solicit comments on the draft proposal from the department prior to local approval. For local governments planning under the Growth Management Act, the local government shall notify both the department and the department of community, trade, and economic development of its intent to adopt shoreline policies or regulations, at least sixty days prior to final local approval, pursuant to RCW 36.70A.106;
- (6) Comply with chapter 43.21C RCW, the State Environmental Policy Act; and
- (7) Approve the proposal.

While these guidelines represent the minimum effort that must be accomplished, the Spokane River and Latah Creek and environs are of vital importance to Spokane. Accordingly, the City's Participation Plan encompasses multiple strategies to facilitate wide spread community participation in the SMP Update.

PUBLIC INVOLVEMENT

Opportunities for public involvement will be provided throughout the 2006-2007 Shorelines Master Program Update to encourage early and continuous public participation (WAC 365-195-600). The following steps will be taken to provide information to the public and to encourage citizen involvement:

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Public Meetings

General and formal opportunities for public comment regarding the City of Spokane 2006-2007 Shorelines Master Program Update will be provided at public meetings and hearings. Public meetings and hearings will include, but are not limited to:

1. Open Houses

The City of Spokane Planning Services Department will periodically hold open houses throughout the SMP Update process. Each open house will feature a presentation covering four basic subject areas:

- a. SMA requirements for review and update of the City's Shoreline Master Program.
- b. Spokane County and City of Spokane growth trends, forecasts, and accommodations.
- c. Preliminary SMA compliance evaluation results.
- d. Public participation program for the 2006-2007 Shorelines Master Program Update.
- e. Any other timely information on the update process.

2. Round Table Discussions

The City will hold a series of Round Table Discussions with various stakeholder groups throughout the SMP Update process. The discussions will allow these groups to interact and discuss issues in a more formal environment.

3. Shorelines Technical Advisory Committee Review (STAC)

The Shorelines Technical Advisory Committee (STAC) consists of representatives from local, regional, state, and tribal agencies. The City is required to seek input, participation, and recommendations from these groups. STAC will be given numerous opportunities to review and comment on the proposed SMP update. STAC also includes a number of non-government individuals with technical expertise in various aspects of shoreline management, land use policy, ecology, and other natural sciences.

4. Plan Commission Meetings

Throughout the entire process, the SMP Planning Team will meet with the Plan Commission at its regularly scheduled meetings, normally held on the second and fourth Wednesday of each month at the City of Spokane City Hall 808 W Spokane Falls Blvd., Council Briefing Room starting at noon. All meetings are open to the public, and a general public comment period is provided

5. Joint Plan Commission and Elected Official Review Meetings

Joint work sessions will be held between the City of Spokane Plan Commission, the City Council, and the Director and staff of the Planning Services Department to review preliminary Shoreline Master Program information. The joint meetings will be scheduled at the conclusion of major tasks or other significant timeline events, such as an open house.

6. Plan Commission Public Hearing(s)

The City Plan Commission will meet to gather information and consider public input on the SMP update throughout the end of the process. The City Plan Commission will hold a minimum of one public hearing and forward its final recommendations and findings to the City Council for further action.

7. City Council Public Hearing(s) on SMP Update

The City Council will conduct one or more meetings and hearings to gather information and consider public input on the SMP Update. These could include, but are not limited to, approval of the public participation plan, approval of any compliance reports, and adoption of the final Shorelines Master Program.

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Written Comments

Written comments are welcome throughout the 2006-2007 Shorelines Master Program Update. To ensure that comments are made part of the public record, written comments must be received by the City of Spokane by the end of the public comment period(s), (to be determined).

All written comments submitted by mail or fax should be sent to:

City of Spokane
Planning Services Department
808 W Spokane Falls Blvd
Spokane WA 99201-3329
Fax: (509) 625-6013

Written comments may also be submitted to a *Citizen Feedback Form* available on the Internet from the 2006-2007 Shorelines Master Program Update link on the Planning Services Department website at: www.spokaneplanning.org or via email to shorelines@spokanecity.org.

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Public Notices and Information Dissemination

The City of Spokane will use a variety of methods to inform the public about upcoming public

meetings, availability of relevant planning documents and reports, and important milestones related to the 2006-2007 Shorelines Master Program Update including, but not limited to:

1. **Internet:** The Planning Services Department will establish a web presence for the update where community members may go to for updates, reports, meeting notices and agendas, and other project information. The webpage will include links to the existing Shorelines Program and other relevant documents. This information is located at: www.spokaneplanning.org Click on "2006-2007 Shorelines Master Program Update."
2. **Mailing List:** The City of Spokane Planning Services Department will maintain a mailing list for notices of scheduled public meetings. Notice will be provided either by mail or email. Individuals and organizations interested in being on the mailing list should email shorelines@spokanecity.org, or contact the City of Spokane Planning Services Department, at (509) 625-6060.
3. **News Releases:** The City of Spokane will issue news releases announcing public meetings, hearings, and comment periods to local media including, but not limited to: The Spokesman-Review, City Cable 5, and other TV media.
4. **Hearings-Decisions:** Public notice of all public hearings and any decisions regarding the review and update of the SMP update will be published under "Legals" in The Spokesman-Review classified section. Public notification of all hearings will be provided at least 10 days before the date of the hearing. The notice shall include the date, time, location, and purpose of the hearing. The City of Spokane may publish other public notices in addition to this legal notification.
5. **Local Information Repositories:** Electronic copies of the public participation plan and other project information will be made available locally for public review at the City of Spokane Library Branches at Downtown, East Side, Hillyard, Indian Trail, Shadle, and South Hill Library System Branches, and at the City of Spokane City Hall on the 3rd Floor.

Additional Public Involvement Methods

In addition to the public participation procedures described above, the City of Spokane will utilize the following means to increase public involvement and to disseminate information:

1. **Additional Meetings:** The City of Spokane may elect to hold additional meetings if it is determined that more meetings are needed to provide project information and/or provide additional opportunities for gathering public comments and public participation.
2. **Access to Staff:** The City of Spokane Planning Services staff will be available to answer questions and provide information regarding the 2006-2007 Shorelines Master Program Update. Staff will be available to meet with civic groups, as work schedules allow. Staff contact information is as follows:

Jo Anne Wright, City Planner II, Project Lead, (509) 625-6017

Melissa Wittstruck, City Planner II, (509) 625-6069

Eric Coles, Project Planner, (509) 625-6146

3. **Utility Billing Inserts:** The City of Spokane may utilize utility billings as another means to provide meeting notice.
4. **Local News Media.** The City of Spokane will strive to work with local news media to disseminate information related to the SMA evaluation and update process in addition to notices of public meetings. Examples of potential outreach activities through the local news media may include, but are not limited to: interviews of key staff and elected officials, focus articles, and public forums.
5. **Community and Neighborhood Groups.** The City of Spokane will coordinate the 2006-2007 Shorelines Master Program Update with neighboring jurisdictions. Neighborhood and community groups are encouraged to stay informed about the SMP Update project. Please visit the website: www.spokaneplanning.org, email shorelines@spokanecity.org, or call the Planning Services Department at 625-6060 for more information.

City of Spokane Public Participation Plan

	2006												2007											
	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J							
	1st Quarter						2nd Quarter						3rd Quarter						4th Quarter					
PC Regular-Scheduled Meetings																								
City Council Hearings & Study Sessions																								
Joint PC/Elected Official Mtg.																								
STAC Activity																								
Open Houses																								
Round Tables																								
Community Assembly - Reg. Sched. Mtg																								
Press Release																								
Website																								
Channel 5 Program																								
Council Connections																								

SMP Update Citizen Participation Plan Schedule

03-01-06

2006

January

Technical Advisory Committee formation
Plan Commission Update - SMP

February

Website
Plan Commission Update - SMP

March

Website
1 Community Assembly - Information
8 Plan Commission Update - CPP
23 City Council Study Session - SMP Information, Consultant, CPP
27 City Council - 1st Reading Resolution to approve Citizen
Participation Plan (CPP)

April

Website
3 City Council - 2nd Reading Resolution to approve CPP
12 First Public Roundtable Discussion
26 Plan Commission Update

May

Website
5 Community Assembly - Update: CPP, Roundtable, next steps
24 Plan Commission - Update: Roundtable, next steps

SMP Update Citizen Participation Plan

03-01-06

2006

June

Website

- 8 Technical Advisory Committee - Update: Roundtable, view draft inventory
- 28 Plan Commission - Update: Draft Inventory

July

Website

Print Media Articles

Channel 5 Program

- 13 Second Public Roundtable Discussion
- 20 Joint Plan Commission & City Council - Update: Roundtable, inventory, hotlist, next steps
- 26 Plan Commission Update

August

Website

Channel 5 Program

- 17 Technical Advisory Committee - Update

September

Website

Council Connections

Print Media Articles

- 8 Community Assembly - Update: Upcoming Open House
- 22 Notice/Advertise Open House

October

Website

Print Media Article

- 5 SMP Open House
- 19 Third Public Roundtable Discussion
- 25 Plan Commission Update

SMP Update Citizen Participation Plan

03-01-06

2006

November

Website

- 3 Community Assembly Update
- 15 Plan Commission Update

December

Website

- 7 Technical Advisory Committee - Update

2007

January

Website

Print Media Article

- 10 Fourth Public Roundtable Discussion
- 24 Plan Commission Update
- 24 Notice/Advertise SMP Open House

February

Website

Print Media Article

- 2 Community Assembly Update, info on Open House
- 8 SMP Open House
- 28 Plan Commission Open House

March

Website

Cable Channel 5

- 21 Plan Commission Update

SMP Update Citizen Participation Plan

03-01-06

2007

April

Website

Print Media Article

Council Connection

- 6 Community Assembly - Update, info on Open House
- 11 Fifth Public Roundtable Discussion
- 11 Notice/Advertise SMP Open House
- 21 SMP Open House
- 25 Plan Commission Update

May

Website

Print Media Article

- 1 SEPA/Combined Notice/Advertise Hearing
- 5 Community Assembly Update
- 9 Plan Commission Workshop
- 23 Plan Commission Public Hearing

June

Website

Print Media Articles

- 1 Notice/Advertisement City Council Hearings
- 11 City Council Hearings

SHAPING SPOKANE VOLUME III, APPENDIX B



2006

January

Website

- 5 Technical Advisory Committee formed
- 11 Plan Commission Update - SMP

February

Consultant hiring process

March

- 1 Community Assembly - Information
- 6 PCED - Information - SMP, Consultant, Public Participation Plan (PPP)
- 8 Plan Commission Update – PPP
- 23 City Council Study Session - SMP Information, Consultant, PPP

April

Shorelines Email address: shorelines@spokanecity.org

- 3 City Council - Resolution adopting Public Participation Plan
- 12 First Roundtable Stakeholder Discussion
- 26 Plan Commission Update
- 27 Mayor Briefing

May

- 5 Community Assembly - Update: PPP, Roundtable, next steps
- 9 Second Roundtable Stakeholder Discussion\
- 22 Mailed a general notice describing the SMP update process to ~ 950 people within 350 feet of the Ordinary High Water Mark along the Spokane River and Latah Creek
- 23 SMP Update was one of the subjects featured on the “Spokane Building Blocks” citizen educational series
- 24 Plan Commission – Workshop
- 31 Technical Advisory Committee – Update

June

Raft Trips-Float Tours of the Spokane River (2)

- 8 Technical Advisory Committee – Update, view draft inventory
- 13 Spokane Chamber of Commerce Policy Committee SMP presentation
- 14 Plan It Spokane Insert in Spokesman-Review
- 18 Spokesman-Review ad for Open House published
- 19 One of Five Open Houses, joint with Comprehensive Plan Update
- 19 Stakeholder update letter mailed
- 21 Two of Five Open Houses, joint with Comprehensive Plan Update
- 22 Inlander ad for Open House published
- 22 Three of Five Open Houses, joint with Comprehensive Plan Update
- 26 Four of Five Open Houses, joint with Comprehensive Plan Update
- 28 Five of Five Open Houses, joint with Comprehensive Plan Update
- 28 Plan Commission Workshop: Review of 2006-07 SMP Update
- 29 Raft Trip

July

- 11 Channel 5 Spokane Building Blocks Education Program – through July
- 14 Community Assembly Update
- 19 Eastern Washington Planners Forum
- 20 Joint Plan Commission & City Council - Update

August

“Plan It Spokane” article published

- 9 Plan Commission Update: Review of Shorelines Inventory Work
- 17 Technical Advisory Committee: Update
- 30 American Planning Association Brown Bag Lunch
- 31 City Council Study Session

September

Ongoing-Channel 5 Council Connections with Councilwoman Verner-through September

- 8 Community Assembly Update
- 9-17 Spokane Interstate Fair – handed out SMP brochures

SHAPING SPOKANE VOLUME III, APPENDIX B

- 22 Notice/Advertise Open House
- 28 Notice mailed to Stakeholders and technical Advisory Committee members for
October 19 Stakeholder Roundtable meeting and November 9 open house
- 28 Out There Monthly article
- October**
- Spokane Interstate Fair – brochure handouts
- 6 Community Assembly Update
- 7 Riverfest Clean-up-SMP brochures handed out
- 19 Third Public Roundtable Discussion
- 25 Plan Commission Workshop, Progress Report
- 27 Field Trip to Latah Creek with City Council and Plan Commission
- November**
- 3-7 Spokesman-Review Ads for Open House
- 3 Community Assembly Update
- 9 Open House at West Central Community Center
- December**
- 4 PCED Update
- 7 Joint Plan Commission/City Council Study Session
- 7 Technical Advisory Committee – Update
- 8 Community Assembly Update
- 13 Plan Commission, Inventory analysis & potential environmental designations
- 15 Comments from Shoreline Technical Advisory Group on Draft Inventory



2007

January

Website

- 9 Mayor Briefing
- 17 Policy Committee # 1
- 17 Eastern Washington Planners Forum
- 18 City Council Study Session
- 24 Plan Commission Update
- 31 SMP Policy Committee meeting # 2

February

- 2 Community Assembly Update
- 13 SMP Policy Committee # 3
- 15 Spokane Area Anglers Forum, access points mapping exercise
- 20 Riverside Neighborhood Presentation
- 22 Land Use Committee (joint with Critical Area Update)
- 28 SMP Policy Committee # 4

March

Cable Channel 5

- 1 Washington State Department of Transportation-collaboration
- 2 Community Assembly Update
- 8 Cliff Cannon Neighborhood Council Meeting
- 14 SMP Policy committee # 5
- 26 East Central Town Hall Meeting Update
- 28 SMP Policy committee # 6

April

Council Connection

- 6 Community Assembly
- 25 Plan Commission Update: Environmental Designations
- 25 SMP Policy Committee # 7
- 26 Land Use Committee

May

- 4 Community Assembly Update
- 9 Plan Commission Workshop: Environmental Designations
- 9 SMP Policy Committee # 8
- 23 Plan Commission Workshop: Environmental Designations

SHAPING SPOKANE VOLUME III, APPENDIX B

	23	SMP Policy Committee # 9
	30	SMP Policy Committee # 10
June		
	1	Notice/Advertisement City Council Hearings
	1	Community Assembly
	13	SMP Policy Committee # 11
	20	SMP Policy Committee (last meeting) # 12
	21	City Council Study Session
July		
	2	Mayor Briefing
	4	PCED Update
	9	City Council Briefing
	13	Community Assembly update
	16	City Council Hearing for Resolution-formal recognition of Phase I
August		
	5	Community Assembly update
September		
	12	Plan Commission Workshop: Update (Goals, Policies, & Regulations)
October		
	10	Plan Commission Workshop: Goals & Policies
	12	Upriver Mobile Tour
	24	Plan Commission Workshop: Goals & Policies
November		
	14	Channel 5 airs Open House announcement
	26	Council President Joe Shogan announces Open House at City Council Meeting
	26	Press Release for Open House
	28	Plan Commission Workshop: Complete Goals & Policies
	29	Inlander Ad for Open House
December		
	1	Out There Monthly Ad for Open House
	6	Inlander Ad for Open House
	6	City Council Briefing
	7	Community Assembly
	11	Spokesman-Review article for Open House
	11	Open House, West Central Community Center-Newton Lounge



2008

January		
Website		
	4	Community Assembly update
	10	City Council Study Session
March		
	3	Planning Community and Economic Development subcommittee of the City Council (PCED) Update
	7	Community Assembly update
	12	Plan Commission Workshop
April		
	4	Planning Director meeting with Mayor Verner
	4	Community Assembly update
	7	PCED SMP
	9	Plan Commission Workshop-Mark Hinshaw and Design Regulation Format
	16	New Plan Commission and new City Council member review
	23	Plan Commission Workshop: Begin review of Regulations
	30	Policy Committee meeting
May		
	1	Press Release for Open House

SHAPING SPOKANE VOLUME III, APPENDIX B

	7	Policy Committee meeting
	8	Spokesman-Review ad in Voice for Open House
	13	Open House, Mason Auditorium West Central Community Center
	14	Plan Commission Workshop: Begin regulation review
	28	Plan Commission Workshop: Review Regulations
June		
	2	PCED meeting
	6	Community Assembly Update
	25	Pan Commission Workshop: Design Regulations
July		
SMP Spokane Building Blocks produced for month of July and August airs on Channel 5		
	9	Plan Commission Workshop: Use regulations
	11	Community Assembly Update
	23	Plan Commission: Design Guidelines and Use Regulations
August		
SMP Spokane Building Blocks produced for month of July and August airs on Channel 5		
	14	City Council Study Session
	27	Plan Commission Workshop: Final Review
	28	Inlander: Notice published for Open House and Plan Commission Public Hearing for September 4 and September 10 respectively
September		
	3	Legal Notice published in Spokesman-Review for Plan Commission Public Hearing on September 10, 2008
	4	Open House: Wastewater Treatment Plant from 5:00 to 7:30pm
	4	Spokesman-Review article on Shoreline Master Program Update
	4	Spokesman-Review ad for Open House and Plan Commission Public Hearing
	8	Mayor Briefing
	10	Plan Commission Public Hearing
	24	Plan Commission Public Hearing Deliberations
October		
	8	Plan Commission: Forward Recommendation to City Council
	9	City Council Study Session
	16	City Council Study Session
	28	City Council Spokane River Field Trip
November		
	3	City Council 1 st Reading
	10	City Council 2 nd Reading and Public Hearing
	17	City Council Public Hearing Deliberations
December		
	1	City Council Public Hearing Deliberations and Adoption
	12	City Council Decision on the Mayoral Veto of the Latah Creek Shoreline Buffers Map

ENVIRONMENTAL CHECKLIST

City of Spokane
Shoreline Master Program Update

August 27th, 2008

SHAPING SPOKANE VOLUME III, APPENDIX C

Environmental Checklist

File No. Shoreline Master Program

Purpose of Checklist:

The State Environmental Policy Act (SEPA) chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An Environmental Impact Statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decide whether an EIS is required.

Instructions for Applicants:

This environmental checklist asks you to describe some basic information about your proposal.

Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can.

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later.

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Use of checklist for nonproject proposals:

Complete this checklist for nonproject proposals, even though questions may be answered "does not apply."

IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (Part D).

For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer," and "affected geographic area," respectively.

SHAPING SPOKANE VOLUME III, APPENDIX C

A. BACKGROUND

1. Name of proposed project, if applicable:

City of Spokane Shoreline Master Program (SMP) Update

2. Name of applicant:

City of Spokane, Washington

3. Address and phone number of applicant or contact person:

Jo Anne Wright
City of Spokane
Planning Services Department
808 West Spokane Falls Blvd
Spokane, WA 99201-3329
(509) 625-6300

4. Date checklist prepared:

August 27, 2008

5. Agency requesting checklist:

City of Spokane, Washington

6. Proposed timing or schedule (including phasing, if applicable):

A public hearing before the City of Spokane Plan Commission is scheduled for on September 10, 2008 with the City Council receiving a packet by October 2008, with an action to adopt by December 2008.

7. a. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

The City of Spokane Shoreline Master Program (SMP) will be periodically reviewed, at a minimum corresponding to the schedule in the Shoreline Management Act (SMA) RCW 90.58.080. Amendments will be made as are necessary to reflect changing local circumstances, new information or improved data, and changes in State statutes and regulations.

b. Do you own or have options on land nearby or adjacent to this proposal? If yes, explain. Not applicable.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

An Inventory and Analysis was completed for the shorelines of the Spokane River and Latah Creek within the City limits in March, 2007. The Inventory and Analysis documents the existing shoreline conditions in 2006 and provides the framework for development of environmental designations, goals, policies and regulations.

A Restoration Plan was completed in April 2008 and establishes overall goals and objectives for City-wide shoreline restoration efforts. The plan identifies and prioritizes restoration opportunities and prescribes generalized treatment options for various restoration scenarios and seeks to develop a draft implementation strategy, including funding options, proposed timelines, an adaptive management strategy, and benchmarks. The plan is based on the inventory and analysis report and includes a consistency review of other plans and assessments aimed at improving the ecological health of the Spokane River and/or Latah Creek.

A draft Cumulative Impact Report was completed in July of 2008 and documents the cumulative impacts of reasonably foreseeable future shoreline development and uses.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

Applications for development permit approvals subject to the SMP are likely. Additional SEPA project level review will be conducted at the time such proposals are submitted and subjected to threshold determinations.

10. List any government approvals or permits that will be needed for your proposal, if known.

City of Spokane City Council
Washington State Department of Ecology

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page.

In the spring of 2005, the City of Spokane Planning Services Department received a grant from the State Department of Ecology to update the city's Shoreline Master Program (SMP), which was originally adopted on March 22, 1976. RCW 90.58.080 requires governments to develop or amend a master program for regulation of uses of the shorelines of the state consistent with the required elements of the guidelines adopted by the Department of Ecology. The City of Spokane SMP update governs development within the shorelines of the Spokane River and Latah Creek within the limits of the City of Spokane.

The SMP consists of shoreline goals and policies, six environment designations with corresponding management policies, use and activity regulations, administrative and procedural regulations, a restoration plan, and maps delineating the Shoreline Jurisdiction, six environments, shoreline buffers, and shoreline districts. Please refer to the City of Spokane Planning Services Department website at www.spokaneplanning.org, then prompt "Shoreline Update" to review the complete draft text and maps pertaining to the SMP. A hard copy of the draft SMP is available upon request.

The objectives of the City of Spokane SMP are to meet new state requirements including "no net loss of ecological function" and to preserve existing physical and visual public access to the shorelines. The city's SMP also proposes the following: to improve

environmental quality, enhance public access and recreational opportunities, plan and coordinate development, raise development standards, and ensure that Spokane's greatest natural assets are carefully managed for the enjoyment of future generations. The program recognizes the interest of the people to be paramount while recognizing the state-wide interest. Preserving the long-term natural characteristics and resources is given preference over development of any kind.

- 12. Location of the proposal. Give sufficient information to a person to understand the precise location of your proposed project, including a street address, if any, and section, township and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit application related to this checklist.**

This is a citywide non-project legislative action which applies to shoreline areas within the City of Spokane, referred to as the "Shoreline Jurisdiction." The City of Spokane is located in Spokane County. This ordinance applies to shorelines of the state as defined by the Shoreline Management Act, RCW 90.58 which includes all streams with a mean annual flow of 200 cubic feet per second or greater.

The Shoreline Jurisdiction includes:

1. All water bodies and land underlying these water bodies within the City of Spokane qualifying as "shorelines of the state," pursuant to the SMA, RCW 90.58.030(2)(c). In the City of Spokane, shorelines of the state are the Spokane River and Latah Creek within the Spokane City limits;
2. All upland areas, also referred to as "shorelands," that extend 200 feet landward in all directions on a horizontal plane from the edge of the ordinary-high-water mark of the Spokane River and Latah Creek within the Spokane City limits; and
3. Any associated wetlands, floodways, and some or all of the 100-year floodplain, including all wetlands within the 100-year floodplain of the Spokane River and Latah Creek within the Spokane City limits.

Please refer to the City of Spokane Planning Services Department website at www.spokaneplanning.org, then prompt "Shoreline Update" to review the Shoreline Jurisdiction Map.

- 13. Does the proposed action lie within the Aquifer Sensitive Area (ASA)? The General Sewer Service Area? The Priority Sewer Service Area? The City of Spokane? (See: Spokane County's ASA Overlay Zone Atlas for boundaries.)**

The entire geographical area addressed by the SMP is within the General Sewer Service Area, the Priority Sewer Service Area, and the City of Spokane. The Aquifer Sensitive Area covers the entire geographical areas addressed by the SMP, with the exception of the southern portion of Latah Creek within the City limits.

14. The following questions supplement Part A.

a. Critical Aquifer Recharge Area (CARA) / Aquifer Sensitive Area (ASA)

- (1) Describe any systems, other than those designed for the disposal of sanitary waste, installed for the purpose of discharging fluids below the ground surface (includes systems such as those for the disposal of stormwater or drainage from floor drains). Describe the type of system, the amount of material to be disposed of through the system and the types of material likely to be disposed of (including materials which may enter the system inadvertently through spills or as a result of firefighting activities).**

Developments within the Shoreline Jurisdiction will direct stormwater to ground surfaces consistent with the Spokane Regional Stormwater Manual, Spokane Regional Health District requirements and 36.70A RCW concurrency requirements.

- (2) Will any chemicals (especially organic solvents or petroleum fuels) be stored in aboveground or underground storage tanks? If so, what types and quantities of material will be stored?**

Some commercial and industrial uses allowed by the Shoreline Master Program may store chemicals in above ground and underground storage tanks. The type of materials will be determined at the time building permits are requested and will be regulated pursuant to all applicable local, state, and federal regulations regarding the storage of chemicals.

- (3) What protective measures will be taken to insure that leaks or spills of any chemicals stored or used on site will not be allowed to percolate to groundwater. This includes measures to keep chemicals out of disposal systems.**

Measures to be taken will be consistent with the City of Spokane Aquifer Recharge Area Protection Code, Chapter 17E.010 SMC, and will be subject to other local, state, and federal regulations concerning use and storage of chemicals on site.

- (4) Will any chemicals be stored, handled or used on the site in a location where a spill or leak will drain to surface or groundwater or to a stormwater disposal system discharging to surface or groundwater?**

To be determined when site specific developments are proposed within the Shoreline Jurisdiction pursuant to the City of Spokane SMP Regulations, Critical Areas Ordinances, or other applicable City of Spokane, state, or federal development regulations.

b. Stormwater

- (1) What are the depths on the site to groundwater and to bedrock (if known)?**

To be determined when site specific developments are proposed in the Shoreline Jurisdiction pursuant to the City of Spokane Shoreline Regulations, Critical Areas Ordinances, or other applicable City of Spokane, state, or federal development regulations

(2) Will stormwater be discharged into the ground? If so, describe any potential impacts?

To be determined when site specific developments are proposed in the Shoreline Jurisdiction. All discharges will comply with Spokane Regional Stormwater Manual, Critical Areas Ordinances and the regulations in the Shoreline Master Program.

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (circle one): flat, rolling, hilly, steep slopes, mountains, other:

The geographical area subject to the Shoreline Master Program contains a variety of topographic features ranging from flat terrain to steep slopes.

b. What is the steepest slope on the site (approximate percent slope)?
Not Applicable.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.

The geographical area subject to the Shoreline Master Program contains a variety of soil types.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

Soil stability conditions will be determined when site-specific developments are proposed and building permits are requested within the Shoreline Jurisdiction.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill:

To be determined when site-specific developments are proposed in the Shoreline Jurisdiction.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

The possibilities of erosion will be examined when site specific developments are proposed in the Shoreline Jurisdiction. The City of Spokane requires the use of Best Management Practices during construction, which should limit or reduce erosion as a result of clearing, construction, or use.

- g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?**

The amount of impervious surfaces to be added in the Shoreline Jurisdiction from development is unknown at this time, but will be determined when site specific developments are proposed. Through Shoreline Design Standards and Guidelines, development will be encouraged to use pervious surfaces where feasible.

However, the largest environment designated in the SMP is the Natural Environment, which only allows single family residences and other low-impact development. Beyond this requirement, very little change to the natural environment is allowed.

- h. Proposed measures to reduce or control erosion or other impacts to the earth, if any:**

The City of Spokane requires that grading plans and specifications be prepared and submitted concurrent with development plans for review and approval. Specific measures to reduce or control erosion will be identified when site specific developments are proposed in the Shoreline Jurisdiction. All projects will comply with the requirements of the Spokane Regional Stormwater Manual, Critical Areas Ordinances, and other applicable local, state, and federal requirements.

2. Air

- a. What type of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial, wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.**

The amount and type of emissions to the air from construction activities within the Shoreline Jurisdiction is unknown at this time, but will be determined when site-specific developments are proposed. It is anticipated that any future development in the Shoreline Jurisdiction will generate dust and emissions from construction machinery and emissions from vehicles entering and exiting development sites. The City of Spokane requires the use of Best Management Practices during construction, which should limit or reduce the affect on air quality. All projects will comply with Spokane County Air Pollution Control Authority (SCAPCA) requirements.

- b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe. Not applicable.**
- c. Proposed measures to reduce or control emissions or other impacts to air, if any:**

The Spokane County Air Pollution Control Authority (SCAPCA) is the local agency that administers state, federal, and local laws and regulations concerning air pollution control within incorporated cities and unincorporated areas within Spokane County. Air pollution sources resulting from

construction activities or future use within the Shoreline Jurisdiction will be consistent with the SMP and will comply with required SCAPCA regulations and permitting processes.

3. Water

a. SURFACE:

- (1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.**

Streams with a mean annual flow of 200 cubic feet per second or greater are subject to the SMP. The City of Spokane's SMP applies to the water bodies and land underlying the Spokane River and Latah Creek within the Spokane City limits and any associated wetlands within the 100-year floodplain.

- (2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.**

It is anticipated that development will occur within the 200-foot Shoreline Jurisdiction, but specific details of each proposed use, modification or development activity will be determined when site specific developments are proposed in the Shoreline Jurisdiction. All use, modifications, and development activity must comply with the City of Spokane Shoreline Regulations, Critical Areas Ordinances, and other applicable City of Spokane, state, or federal development regulations.

- (3) Estimate the amount of fill and dredge material that would be placed in or removed from the surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.**

To be determined when site specific developments are proposed in the Shoreline Jurisdiction. Any use, modification, or development must comply with the Shoreline Master Program sections referring to dredging and dredge materials, in addition to other applicable local, state, and federal regulations.

- (4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.**

To be determined when site specific developments are proposed in the Shoreline Jurisdiction. Any development or use that requires surface water withdrawals or diversions must comply with the Shoreline Master Program, in addition to other applicable local, state, and federal regulations.

- (5) **Does the proposal lie within a 100-year floodplain? Yes If so, note location on the site plan.**

FEMA maps indicate the existence of 100-year floodplains throughout the Shoreline Jurisdiction. The Shoreline Jurisdiction includes "some or all of the 100-year floodplain."

- (6) **Does the proposal involve any discharge of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.**

To be determined when site specific developments are proposed in the Shoreline Jurisdiction. Any development or use that involved the discharge of waste materials to surface waters must comply with the Shoreline Master Program, in addition to other applicable local, state, and federal regulations.

b. GROUND:

- (1) **Will groundwater be withdrawn, or will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.**

To be determined when site specific developments are proposed in the Shoreline Jurisdiction. Any use, modification, or development that requires groundwater withdrawals or discharges to groundwater must comply with the SMP and other applicable local, state, and federal regulations.

- (2) **Describe waste material that will be discharged into the ground from septic tanks or other sanitary waste treatment facility. Describe the general size of the system, the number of houses to be served (if applicable) or the number of persons the system(s) are expected to serve.**

To be determined when site specific developments are proposed in the Shoreline Jurisdiction. However, it is expected that future development in the Shoreline Jurisdiction will be connected to the City of Spokane sanitary sewer system.

c. WATER RUNOFF (INCLUDING STORMWATER):

- (1) **Describe the source of runoff (including stormwater) and method of collection and disposal if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.**

The source and method of collection and disposal of runoff from future development and redevelopment in the Shoreline Jurisdiction cannot be determined at this time. It is anticipated that runoff from future development projects will be generated from rain and snow melt and will be disposed of on site in accordance with the Spokane Regional Stormwater Manual. In addition, Shoreline Design Standards and

Guidelines encourage the use of pervious surfaces in new development where feasible.

(2) Could waste materials enter ground or surface waters? If so, generally describe.

To be determined when site specific developments are proposed in the Shoreline Jurisdiction. Surface contaminants, such as dust and vehicle fluids from paved surfaces constructed as part of future development within the Shoreline Jurisdiction will be required to comply with the Spokane Regional Stormwater Manual as well as other applicable local, state, and federal regulations.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any.

Any development or use in the Shoreline Jurisdiction will be required to comply with the Spokane Regional Stormwater Manual, Critical Areas Ordinances, as well as other applicable local, state, and federal regulations. In addition, Shoreline Design Standards and Guidelines encourage new development to use pervious surfaces where feasible.

4. Plants

a. Check or circle type of vegetation found on the site:

- X _____ **Deciduous tree: alder, maple, aspen, other.** A variety of deciduous trees exist within the area subject to the SMP.
- X _____ **Evergreen tree: fir, cedar, pine, other.** A variety of evergreen trees exist within the area subject to the SMP.
- X _____ **Shrubs** A variety of shrubs exist throughout the area subject to the SMP.
- X _____ **Grass** A variety of grasses exist throughout the area subject to the SMP.
- X _____ **Pasture** A small portion of the Latah Creek area has land designated in the Comprehensive Plan as Agricultural.
- X _____ **Crop or grain** A small portion of Latah Creek is designated in the Comprehensive Plan as Agricultural.
- X _____ **Wet soil plants** - Extensive wet soil plants exists in the area subject to the SMP.
- X _____ **Water plants** – Extensive water plants exist in the area subject to this SMP.
- _____ **Other types of vegetation.**

b. What kind and amount of vegetation will be removed or altered?

To be determined when site specific developments are proposed in the Shoreline Jurisdiction. However, any use, modification, or development in the Shoreline Jurisdiction must be carried out in a manner consistent with WAC 173-26-186(8), which requires that the ecological functions of shorelines be protected, and at a minimum, a “no net loss” of ecological functions achieved. Therefore, if it determined that a use, modification, or development activity will damage or degrade shoreline vegetation,

replacement of said vegetation is required, as outlined in the SMP Vegetation Replacement Plan.

- c. **List threatened or endangered species known to be on or near the site.**

To be determined when site specific developments are proposed in the Shoreline Jurisdiction.

- d. **Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:** N/A

It is expected that any new development or use within the Shoreline Jurisdiction will include new landscaping in accordance with the City of Spokane's development standards. In addition, any new development or use must comply with the vegetation conservation standards outlined in the Shoreline Master Program.

5. Animals

- a. **Circle any birds and animals which have been observed on or near the site are known to be on or near the site:**

birds: hawk, heron, eagle, songbirds, other: _____

mammals: deer, bear, elk, beaver, other: _____

fish: bass, salmon, trout, herring, shellfish, other: _____

other: _____

The City of Spokane Fish and Wildlife Conservation Areas Map (a part of the City of Spokane Critical Areas Ordinances) shows a variety of animal habitat areas within the Shoreline Jurisdiction. Site specific habitats will be determined when site specific developments are proposed in the Shoreline Jurisdiction.

- b. **List any threatened or endangered species known to be on or near the site.**

Any threatened or endangered species will be identified when site specific developments are proposed in the Shoreline Jurisdiction

- c. **Is the site part of a migration route? If so, explain.**

The Shoreline Jurisdiction contains habitat, resting, and/or nest areas for migratory species.

- d. **Proposed measures to preserve or enhance wildlife, if any:**

To be determined when site specific developments are proposed in the Shoreline Jurisdiction. However, any new use, modification, or development activity in the Shoreline Jurisdiction will be subject to the protection requirements of the Shoreline Master Program, Critical Areas Ordinances, and any other applicable local, state, or federal regulations.

6. Energy and natural resources

- a. What kinds of energy (electric, natural gas, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.**

The energy needs of future uses, modifications, or developments within the Shoreline Jurisdiction cannot be determined at this time, but will be evaluated when site specific developments are proposed.

- b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.**

The potential to affect the use of solar energy by adjacent properties within the Shoreline Jurisdiction cannot be determined at this time, but will be evaluated when site specific developments are proposed.

- c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:**

To be determined when site specific developments are proposed in the Shoreline Jurisdiction. All projects must comply with the energy conservations requirements of the Uniform Building Code. The SMP Design Guidelines encourage that Leadership in Energy and Environmental Design (LEED) principles be used in design for new development projects within the shorelines. The SMP Design Guidelines also promote Low Impact Development (LID) practices within the shoreline jurisdiction.

7. Environmental health

- a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste that could occur as a result of this proposal? If so, describe.**

To be determined when site specific developments are proposed in the Shoreline Jurisdiction.

- (1) Describe special emergency services that might be required.**

To be determined when site specific developments are proposed in the Shoreline Jurisdiction.

- (2) Proposed measures to reduce or control environmental health hazards, if any:**

To be determined when site specific developments are proposed in the Shoreline Jurisdiction. All new uses, modifications, or developments will comply with Washington State environmental health requirements and the shoreline protection requirements in the Shoreline Master Program.

b. NOISE:

- (1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?**

To be determined when site specific developments are proposed in the Shoreline Jurisdiction.

- (2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.**

To be determined when site specific developments are proposed in the Shoreline Jurisdiction.

- (3) Proposed measure to reduce or control noise impacts, if any:**

To be determined when site specific developments are proposed in the Shoreline Jurisdiction. Specific site development projects will comply with state noise reduction requirements to the extent that state law allows.

8. Land and shoreline use

- a. What is the current use of the site and adjacent properties?**

The area subject to the Shoreline Master Program contains residential, general commercial, office, industrial, institutional, agriculture, and open space land uses. The land use designation for specific projects will be identified when site specific developments are proposed in the Shoreline Jurisdiction.

- b. Has the site been used for agriculture? If so, describe.**

There is existing Agriculture use in the Latah Creek area. The Shoreline Master Program allows the continued use of these lands for agricultural purposes.

- c. Describe any structures on the site.**

The area subject to the Shoreline Master Program contains a variety of structures. To be determined when site specific developments are proposed in the Shoreline Jurisdiction.

- d. Will any structures be demolished? If so, which?**

To be determined when site specific developments are proposed in the Shoreline Jurisdiction.

- e. What is the current zoning classification of the site?**

The Shoreline Jurisdictions contains a variety of zoning categories set forth in the Land Use Standards of the City of Spokane Unified Development Code

that are consistent with Comprehensive Plan land use designations. They include, but are not limited to various residential, commercial, central business district, industrial, agricultural, and center and corridor zones. The zoning classifications for specific projects will be identified when site specific developments are proposed in the Shoreline Jurisdiction.

f. What is the current comprehensive plan designation of the site?

The area subject to the Shoreline Master Program contains a variety of comprehensive plan land use designations including residential, commercial, industrial, office, institutional, agriculture, and open space. Site-specific comprehensive plan designations will be identified when site specific developments are proposed in the Shoreline Jurisdiction.

g. If applicable, what is the current shoreline master program designation of the site?

All shoreline areas are classified in one of the following six shoreline designations: Natural, Urban Conservancy, Shoreline Residential, Limited Urban, Intensive Urban, and Wastewater Treatment Plant.

h. Has any part of the site been classified as a critical area? If so, specify.

All the shoreline areas are located in one or more critical areas and are subject to the regulations in the City of Spokane Critical Areas Ordinances.

i. Approximately how many people would reside or work in the completed project?

To be determined when site specific developments are proposed in the Shoreline Jurisdiction.

j. Approximately how many people would the completed project displace?

To be determined when site specific developments are proposed in the Shoreline Jurisdiction.

k. Proposed measures to avoid or reduce displacement impacts, if any:

To be determined when site specific developments are proposed in the Shoreline Jurisdiction.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

The Shoreline Master Program considers existing land use patterns and is consistent with Comprehensive Plan land use and zoning classifications, ensuring consistency with all requirements of the Washington State Growth Management Act. The SMP goals, policies, and environmental designations will be incorporated into the City of Spokane Comprehensive Plan as Chapter

14, Shorelines. The Shoreline Regulations will be incorporated into the City of Spokane Unified Development Code, Chapter 17E.060 SMC.

9. Housing

- a. Approximately how many units would be provided, if any? Indicate whether high, middle or low-income housing.**

To be determined when site specific developments are proposed in the Shoreline Jurisdiction.

- b. Approximately how many units, if any, would be eliminated? Indicate whether high-, middle- or low-income housing.**

To be determined when site specific developments are proposed in the Shoreline Jurisdiction.

- c. Proposed measures to reduce or control housing impacts, if any:**

To be determined when site specific developments are proposed in the Shoreline Jurisdiction.

10. Aesthetics

- a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?**

The Shoreline Master Program has two height alternatives under review. The first alternative limits building heights in the Downtown and Campus Shoreline Districts to 55 feet. The second alternative allows building heights of 150 feet in the Downtown and Campus Shoreline Districts, but limits the amount of building site coverage and requires narrower building standards above 55 feet to preserve visual access. Both alternatives limit building height to 35 feet in the Upriver, Great Gorge/Downriver and Latah Districts. The current permitted height in the Downtown and Campus Districts is 150 feet; therefore, neither of these alternatives would permit greater than existing allowed heights. Refer to the City of Spokane Planning Services Department website at www.spokaneplanning.org, then prompt "Shoreline Update" to review the complete draft text and Shoreline District Map pertaining to proposed shoreline heights.

- b. What views in the immediate vicinity would be altered or obstructed?**

The Shoreline Master Program includes development standards for a visual access setback to preserve views of the river corridor and the scenic environment along the river from the public street system. Visual access is achieved by setting buildings back a minimum of 15 feet from property lines adjacent to public rights-of-way that intersect the Shoreline Jurisdiction.

c. Proposed measures to reduce or control aesthetic impacts, if any:

To be determined when site specific developments are proposed in the Shoreline Jurisdiction. All projects will comply with the City of Spokane zoning code requirements which include but are not limited to standards pertaining to landscaping and screening. Additionally, the Shoreline Regulations require maintenance of shoreline aesthetics through specific Shoreline Design Standards and Guidelines to help ensure that development complements the unique and fragile character of the shoreline through careful consideration and implementation of site development and building design concepts.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

To be determined when site specific developments are proposed in the Shoreline Jurisdiction.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

To be determined when site specific developments are proposed in the Shoreline Jurisdiction.

c. What existing off-site sources of light or glare may affect your proposal?

To be determined when site specific developments are proposed in the Shoreline Jurisdiction.

d. Proposed measures to reduce or control light and glare impacts, if any:

To be determined when site specific developments are proposed in the Shoreline Jurisdiction. However, the Shoreline Master Program includes Design Standards and Guidelines that require uses, modifications, and developments in the Downtown, Campus, and Great Gorge Shoreline Districts to implement dark sky standards to reduce glare and spillover from lighting associated with parking lots or buildings.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

Shoreline areas subject to the Shoreline Master Program include a variety of recreational opportunities including but not limited to hiking, fishing, swimming, canoeing, floating, hunting and picnicking.

- b. **Would the proposed project displace any existing recreational uses? If so, describe.**

The Shoreline Master Program will not adversely affect existing recreation uses or public access to the shoreline.

- c. **Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:**

The Shoreline Master Program includes goals, policies and regulations which are intended to protect, enhance, and encourage recreation opportunities in the Shoreline Jurisdiction.

13. Historic and cultural preservation

- a. **Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.**

Numerous designated historical sites are located within the Shoreline Jurisdiction and are subject to the Shoreline Master Program.

- b. **Generally describe any landmarks or evidence of historic archaeological, scientific or cultural importance known to be on or next to the site.**

To be determined when site specific developments are proposed in the Shoreline Jurisdiction. Generally, there are numerous designated historical, archeological, and cultural sites located in the Shoreline Jurisdiction and subject to the Shoreline Master Program.

- c. **Proposed measures to reduce or control impacts, if any:**

The Shoreline Master Program includes goals, policies and regulations which are intended to protect historical and cultural artifacts and structures within shoreline areas.

14. Transportation

- a. **Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.**

To be determined when site specific developments are proposed in the Shoreline Jurisdiction. However, there are numerous arterials, local access streets, private roads, driveways, and bridges that are located in the Shoreline Jurisdiction. Any use, modification, or development that requires the construction of new transportation services must comply with the Shoreline Master Program, Critical Areas Ordinances, and any other applicable local, state, or federal regulations.

- b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?**

To be determined when site specific developments are proposed in the Shoreline Jurisdiction. Spokane Transit Authority provides bus access to shoreline areas located within the City of Spokane.

- c. How many parking spaces would the completed project have? How many would the project eliminate?**

To be determined when site specific developments are proposed in the Shoreline Jurisdiction.

- d. Will the proposal require any new roads or streets, or improvements to existing roads or streets not including driveways? If so, generally describe (indicate whether public or private).**

To be determined when site specific developments are proposed in the Shoreline Jurisdiction. However, any development or use that require the construction of new transportation services must comply with the Shoreline Master Program, Critical Areas Ordinances, and any other applicable local, state, or federal regulations.

- e. Will the project use (or occur in the immediate vicinity of) water, rail or air transportation? If so, generally describe.**

To be determined when site specific developments are proposed in the Shoreline Jurisdiction.

- f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak would occur.**

To be determined when site specific developments are proposed in the Shoreline Jurisdiction.

- g. Proposed measures to reduce or control transportation impacts, if any:**

To be determined when site specific developments are proposed in the Shoreline Jurisdiction. Any new transportation services must comply with the Shoreline Master Program, Critical Areas Ordinances, and any other applicable local, state, or federal regulations, in addition to concurrency standards in RCW 36.70A.

15. Public services

- a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.**

To be determined when site specific developments are proposed in the Shoreline Jurisdiction.

- b. Proposed measures to reduce or control direct impacts on public services, if any:**

To be determined when site specific developments are proposed in the Shoreline Jurisdiction.

16. Utilities

- a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other:**

To be determined when site specific developments are proposed in the Shoreline Jurisdiction.

- b. Describe the utilities that are proposed for the project, the utility providing the service and the general construction activities on the site or in the immediate vicinity which might be needed.**

To be determined when site specific developments are proposed in the Shoreline Jurisdiction.

C. SIGNATURE

I, the undersigned, swear under penalty of perjury that the above responses are made truthfully and to the best of my knowledge. I also understand that, should there be any willful misrepresentation or willful lack of full disclosure on my part, the *agency* may withdraw any Determination of Nonsignificance that it might issue in reliance upon this checklist.

Date: August 27th, 2008

Signature: _____

Jo Anne Wright for Leroy Eadie

Please Print or Type:

Proponent: City of Spokane
Leroy Eadie
Planning Director
Responsible Official

Address: 808 W Spokane Falls Blvd Spokane WA 99201

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Person completing form (if different from proponent):

Jo Anne Wright, AICP

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FOR STAFF USE ONLY

Staff member(s) reviewing checklist: Leroy Eadie, Jo Anne Wright, and Nikole Coleman

Based on this staff review of the environmental checklist and other pertinent information, the staff concludes that:

- A. ☒ **there are no probable significant adverse impacts and recommends a Determination of Nonsignificance.**
- B. ☐ **probable significant adverse impacts do exist for the current proposal and recommends a Mitigated Determination of Nonsignificance with conditions.**
- C. ☐ **there are probable significant adverse environmental impacts and recommends a Determination of Significance.**

D. SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS

(Do not use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction with the list of elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage or release of toxic or hazardous substances; or production of noise?

The plan does allow future use, modifications, and development activities that will likely be constructed over pervious ground, providing for considerably more impervious surfaces than now exist within the Shoreline Jurisdiction, thereby causing additional stormwater discharges to the ground. Additional traffic will be generated by new and expanded development and uses causing additional noise and air contamination in portions of the shoreline. It is unlikely that toxic or hazardous substances will likely be stored within the Shoreline Jurisdiction.

Proposed measures to avoid or reduce such increases are:

Any future shoreline development or use will comply with Critical Areas Ordinances, Spokane Regional Stormwater Manual, Floodplain Management Regulations, Spokane County Air Pollution Control Authority (SCAPCA) requirements, Washington State Hazardous Materials Management requirements and Spokane County Regional Health District environmental health requirements. The project-specific SEPA review process may also be used to mitigate adverse impacts. The regulations in the Shoreline Master Program will also be used to minimize impacts, such as the requirements for no net loss of shoreline ecological functions and vegetation conservation.

2. How would the proposal be likely to affect plants, animals, fish or marine life?

The proposed update to the City of Spokane Shoreline Master Program has been reviewed under the requirements of RCW 90.58 and WAC 173-26 and WAC 173-27. The SMP contains goals, policies, and regulations that require no net loss of ecological functions, mitigation sequencing, and vegetation conservation within the Shoreline Jurisdiction. The intent of the proposed ordinance is to protect the shoreline. If a project will damage or degrade shoreline ecological functions or requires the removal of native shoreline vegetation within the Shoreline Jurisdiction, a Vegetation Replacement Plan shall be required.

Proposed measures to protect or conserve plants, animals, fish or marine life are:

The Shoreline Master Program contains goals, policies, and regulations to protect shoreline plants and animal habitat in the Shoreline Jurisdiction, as well as requirements to achieve no net loss of ecological functions, mitigation sequencing, and vegetation conservation. All shoreline project applicants will be required to submit a Shoreline/Critical

Areas Checklist to inventory existing shoreline vegetation, including type, condition, and location. If critical vegetation exists on site, a shoreline construction site plan will be required to show how mitigation sequencing is being implemented, in addition to outlining areas of vegetation protection during construction. If a project will damage or degrade native shoreline vegetation within the Shoreline Jurisdiction, a Vegetation Replacement Plan shall be required. Further, a pre-development conference is designed to promote general awareness earlier in the process and ensure compliance and protection. Any new development or use will also be required to comply with the City of Spokane Critical Areas Ordinances, as well as any other applicable local, state, or federal regulations.

3. How would the proposal be likely to deplete energy or natural resources?

The Shoreline Master Program allows for continued development or use which may result in more buildings being built or renovated and may encourage more people to live within the Shoreline Jurisdiction, which could lead to increased use of energy and natural resources.

Proposed measures to protect or conserve energy and natural resources are:

Compliance with energy and natural resource conservation measures will be required during future specific project approval. The Shoreline Master Program includes goals, policies and regulations which require mitigation measures which are intended to conserve shoreline natural resources.

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection, such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, flood plains or prime farmlands?

The SMP contains goals, policies, and regulations for flood hazard reduction, protection of critical areas, and mitigation requirements to avoid or minimize the affect of development or uses on environmentally sensitive areas in the Shoreline Jurisdiction.

Proposed measures to protect such resources or to avoid or reduce impacts are:

Protections provided by the SMP include requirements to achieve no net loss of shoreline ecological functions, mitigation sequencing, and vegetation conservation. In addition, any future shoreline development will be required to submit a Vegetation Replacement Plan if the project will require the removal or degradation of any native vegetation within the Shoreline Jurisdiction. Further, a pre-development conference is intended to promote general awareness of resource preservation and restoration earlier in the process to ensure compliance. Any new use, modification, or development will also be required to comply with the City of Spokane Critical Areas Ordinances, as well as any other applicable local, state, or federal regulations.

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

The intent of the SMP is to protect shoreline ecological functions and values and to encourage shoreline developments and uses that are compatible with natural shoreline features. Shoreline regulations pertaining to shoreline uses, modifications, and development activities were developed based on an inventory and assessment of the shoreline ecological functions and existing shoreline land use patterns, the designation of shoreline environments and uses specific to those environments, and goals and policies that reflect the desires of the community and address Shoreline Management Act requirements. The proposed SMP is consistent with the SMA, City of Spokane Comprehensive Plan and development regulations, and other local, state, and federal development requirements.

Proposed measures to avoid or reduce shoreline and land use impacts are:

All shoreline use, modifications, and development activities must comply with City of Spokane and Washington State requirements pertaining to stormwater drainage, road access, building height, landscaping and screening, buffers and structure setbacks, lot coverage, glare reduction, aquifer protection, soil stabilization, grading and filling, sewage disposal, solid waste disposal, floodplain management and the regulations in the Shoreline Master Program. The Shoreline Master Program also contains requirements for no net loss of shoreline ecological functions and vegetation conservation. Further, a critical areas pre-development conference and checklist are intended to promote general awareness earlier in the process and ensure compliance and protection.

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

The adoption and implementation of the Shoreline Master Program will not increase demand on transportation or public services and utilities. However, site specific demands will be determined and evaluated on a case by case basis.

Proposed measures to reduce or respond to such demand(s) are:

Any use, modification, or development allowed by the Shoreline Master Program will be required to comply with all applicable local, state, or federal regulations to minimize impacts to transportation, public services and utilities.

7. Identify, if possible, whether the proposal may conflict with local, state or federal laws or requirements for the protection of the environment.

The City of Spokane SMP complies with the requirements of GMA and applicable federal requirements and is consistent with local plans and ordinances.

C. SIGNATURE

I, the undersigned, swear under penalty of perjury that the above responses are made truthfully and to the best of my knowledge. I also understand that, should there be any willful misrepresentation or willful lack of full disclosure on my part, the *agency* may withdraw any Determination of Nonsignificance that it might issue in reliance upon this checklist.

Date: August 27th, 2008

Signature: _____

Jo Anne Wright for Leroy Eadie

Please Print or Type:

Proponent: City of Spokane
Leroy Eadie
Planning Director
Responsible Official

Address: 808 W Spokane Falls Blvd Spokane WA 99201

Phone: 509.625.6300

Person completing form (if different from proponent):

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FOR STAFF USE ONLY

Staff member(s) reviewing checklist: Leroy Eadie, Jo Anne Wright, and Nikole Coleman

Based on this staff review of the environmental checklist and other pertinent information, the staff concludes that:

- A. ☒ **there are no probable significant adverse impacts and recommends a Determination of Nonsignificance.**
- B. ☐ **probable significant adverse impacts do exist for the current proposal and recommends a Mitigated Determination of Nonsignificance with conditions.**
- C. ☐ **there are probable significant adverse environmental impacts and recommends a Determination of Significance.**

SHAPING SPOKANE VOLUME III, APPENDIX C

SPOKANE ENVIRONMENTAL ORDINANCE

(WAC 197-11-970) Section 11.10.230(3)
Determination of Nonsignificance (DNS)

File No. Non-Project Action

DETERMINATION OF NONSIGNIFICANCE

Description of proposal: RCW 90.58.080 requires governments to develop or amend a master program for regulation of uses of the shorelines of the state consistent with the required elements of the guidelines adopted by the Department of Ecology. The City of Spokane Shoreline Master Program (SMP) update governs development within the shorelines of the Spokane River and Latah Creek within the limits of the City of Spokane.

The SMP consists of shoreline goals and policies, six environment designations with corresponding management policies, use and activity regulations, administrative and procedural regulations, a restoration plan, and maps delineating the Shoreline Jurisdiction, six environments, buffers, and shoreline districts.

Proponent: City of Spokane

Location of proposal, including street address, if any: This is a citywide non-project legislative action which applies to shoreline areas within the City of Spokane, referred to as the "Shoreline Jurisdiction." The City of Spokane is located in Spokane County. This ordinance applies to shorelines of the state as defined by the Shoreline Management Act, RCW 90.58 which includes all streams with a mean annual flow of 200 cubic feet per second or greater

Lead agency: City of Spokane

The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An Environmental Impact Statement (EIS) is not required under RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request.

- ☐ There is no comment period for this DNS.
- ☐ This DNS is issued after using the optional DNS process in section 197-11-355 WAC. There is no further comment period on the DNS.
- ☒ This DNS is issued under 197-11-340(2); the lead agency will not act on this proposal for 14 days from the date below. Comments must be submitted by: September 10, 2008

Responsible official: Leroy Eadie

Position/title: Director, Planning Services Department Phone (509) 625-6300

Address: 808 West Spokane Falls Boulevard, Spokane, WA 99201-3329

Date: August 27th, 2008 Signature: Jo Anne Wright for Leroy Eadie

You may appeal this determination to (name) Planning Services Department

at (location): 3rd Floor, City Hall, 808 West Spokane Falls Boulevard, Spokane, WA 99201-3329

no later than (date): 5:00 p.m., September 10, 2008

by (method): completion of the Appeal Form and payment of appeal fee, pursuant to SMC 08.02.066

You should be prepared to make specific factual objections.

Contact: Jo Anne Wright, (509) 625-6300 to read or ask about the procedures for SEPA appeals.

CITY OF SPOKANE SHORELINE MASTER PROGRAM UPDATE INVENTORY AND ANALYSIS

City of Spokane Planning Services Department
808 West Spokane Falls Boulevard
Spokane, Washington 99201

July 2008

CITY OF SPOKANE
SHORELINE MASTER PROGRAM UPDATE
INVENTORY AND ANALYSIS

City of Spokane
Planning Services Department
808 W. Spokane Falls Boulevard
Spokane, Washington 99201

Prepared by



920 North Argonne Rd.
Spokane, Washington 99212

in association with
Jim Kolva Associates and Michael Folsom

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Appendix H: Spokane River and Latah Creek Map Portfolio (separate document)

LIST OF ACRONYMS

AFB	Air Force Base
As	arsenic
BNSF	Burlington Northern-Santa Fe
Cd	cadmium
cfs	cubic feet per second
CMZ	Channel Migration Zone
CSOs	combined sewer overflows
Cu	copper
DO	dissolved oxygen
Ecology	State of Washington Department of Ecology
EPA	Environmental Protection Agency
EWU	Eastern Washington University
FEMA	Federal Emergency Management Agency
GIS	Geographical Information System
Hg	mercury
LUST	Leaking Underground Storage Tank
LWD	large woody debris
MSL	mean sea level
NRCS	Natural Resources Conservation Service
OHWM	Ordinary High Water Mark
Pb	lead
pH	Measure of acidity or alkalinity of a solution
PCBs	polychlorinated biphenyls
PFC	Proper functioning condition
PHS	Priority Habitat and Species
QAPP	Quality Assurance Project Plan
RCW	Revised Code of Washington
RHA	Riparian habitat areas
RM	River Mile
ROW	Right-of-Way
SCCD	Spokane County Conservation District
SCWD	Spokane County Water District
SIRTI	Spokane Intercollegiate Research & Technological Institute
SMA	The State of Washington Shoreline Management Act
SMP	shoreline master programs
SR	State Route
SRHD	Spokane Regional Health District
SSDP	shoreline development permit
TMDL	Total Maximum Daily Load
USGS	United States Geological Survey
USTs	underground storage tanks
WAC	Washington Administrative Code
WDFW	Washington Department of Fish and Wildlife
WDOH	Washington Department of Health
WRIA	Water Resources Inventory Area
WTP	Wastewater Treatment Plant
Zn	zinc

GLOSSARY

1. **4-DDE.** Widespread environmental contaminants that cause eggshell thinning in birds' eggs.
2. **100-year flood.** The terms "10 year", "50 year", "100 year", and "500 year" floods are used to describe the estimated probability of a flood event happening in any given year. Their primary use is for determining flood insurance rates in flood hazard areas. A 10 year flood has a 10 percent probability of occurring in any given year, a 50 year event a 2 percent probability, a 100 year event a one percent probability, and a 500 year event a 0.2 percent probability.
3. **Aquifer Recharge Areas.** Geological formations where rainwater or seepage actually enters an aquifer to replenish or recharge it. Aquifers typically consist of gravel, sand, sandstone, or fractured rock. In recharge areas, water is able to move from the surface down into the aquifer to replenish groundwater supplies, but contaminants may also enter the aquifer at the surface level.
4. **Bank Armoring.** Protective covering, such as rocks, vegetation, or engineering materials used to protect stream banks, or fill or cut slopes from flowing water. Stream bank and channel armoring is done to prevent erosion of channel banks and bottoms during runoff events. In some hydrologic systems stream banks are a major source of sediment.
5. **Bio-infiltration** (208) swales combine grasses and soils to remove stormwater pollutants by percolation into the ground. Their pollutant removal mechanisms include filtration, soil adsorption, and uptake by vegetated root zones.
6. **Bio-stabilization.** Biological shore protection techniques comprised of living and/or organic materials, such as native grasses and sedges; live stakes and posts; jute netting; and coir fiber rolls and mats.
7. **Brownsfield.** Hazardous material-contaminated site. Remediation includes clean-up of site prior to re-development.
8. **Channel Aggradation.** The accumulation of sediment in rivers and nearby landforms, which occurs when sediment supply exceeds the ability of a river to transport the sediment. The increase in sediment is caused by a decrease in soil binding that results from plant growth being suppressed.
9. **Channel Migration Zone (CMZ).** The area within which a river channel is likely to migrate or move over a period of time. The CMZ for Latah Creek is approximated by the meander belt that has been delineated by the Spokane County Conservation District.
10. **Channelization.** The process of reconstructing the natural course of a stream in order to make it flow into a restricted path.
11. **Combined Sewer Overflows (CSOs)** and stormwater point discharges. Combined sewers convey both sanitary and stormwater flows. Combined sewers were constructed in Spokane, as in many other communities during the late 1800's and the early 1900's.
12. **Conservation Areas.** Conservation areas define areas of undeveloped land primarily left in its natural condition. These areas may be used for passive recreational purposes, to create secluded areas, or as buffers in urban areas. As of 2005, the City of Spokane manages eight conservation properties within city limits. These conserved lands include wetlands, farmlands, steep hillsides, river corridors, viewpoints and wildlife habitats and corridors.
13. **Critical Areas.** The Washington Growth Management Act (GMA) requires cities and counties to designate and protect the functions and values of critical areas, and these are defined as: 1) Wetlands; 2) Areas with a critical recharging effect on aquifers for potable water (CARAs); 3) Frequently flooded areas; 4) Geologically hazardous areas, and 5) Fish and wildlife habitat conservation areas. Recent changes to GMA further require that cities and counties use "best available science" (BAS) when designating and protecting these critical areas.
14. **Cumulative impacts.** Prospective impacts from a proposed action that may be indirectly or directly related to the action and, when taken together, may constitute or result in short-term or long-term impacts.

15. **Ecological Condition Ratings.** Ratings reflect the current structural diversity, density, and continuity of native plant communities. Riparian vegetative communities trap sediments and nutrients from surface runoff and provide a matrix of root systems that serve as effective filters, minimize streambank erosion and flooding damage, assist streamflow maintenance, and moderate temperatures.
16. **Ecological Function Assessment.** For each of the inventory reaches in this document describes the eight processes and functions identified in the SMA as summarized in Section 3.2.
17. **Footprint** (building). The shape and orientation of the ground floor of a structure on the lot.
18. **Frequently Flooded Areas.** These areas of special flood hazard have been identified by the Federal Insurance Administration in the Flood Insurance Rate Maps.
19. **Geologically hazardous areas.** Geologically hazardous areas include both erosion and landslide hazard areas.
20. **Geomorphic processes.** Induced by the hydrology create the in-stream structure that aquatic species have adapted to. Pools, riffles, glides, cover, and off-channel refugia are created through the movement of water at various flows. Each of these habitat elements together provides the complexity in a stream system that is necessary for the various species and life stages of aquatic organisms.
21. **Habitat Fragmentation.** The separation or breakup of a habitat area into smaller sections or habitat blocks by activities, such as development, logging, and agriculture, often resulting in degraded habitat due to blocked migration corridors and decreased access to water and feeding areas. It can also create isolated populations of wildlife and a decrease in their genetic diversity.
22. **Habitat.** The sum total of all the environmental factors of a specific place that is occupied by an organism, population, or a community. 1) High species diversity; 2) High vulnerability to habitat alteration; 3) High wildlife density; 4) Important movement corridors; 5) Important wildlife breeding habitat; 6) Important wildlife seasonal ranges; 7) Limited availability.
23. **Hydrologic functions** (shoreline). Include the transport of water and sediment across the natural range of flow variability; attenuating flow energy; developing pools, riffles, gravel bars, and the recruitment and transport of large woody debris and other organic material.
24. **Hyporheic.** Within a shoreline this zone provides the following functions: removing excessive nutrients and toxic compounds; water storage; support of vegetation and invertebrates; sediment storage; and maintenance of base flows. The subsurface habitat, or hyporheic zone, is the interstitial habitat beneath the streambed that is the interface between surface water and the adjoining groundwater. Vertical and lateral dimensions of subsurface water movements are controlled by geologic structure, such as the relative permeability of underlying strata.
25. **Invasive Plant Species.** Invasive plants can alter and disrupt natural habitats and reduce biodiversity. They are most threatening in ecosystems such as wetlands and fire prone areas. Invasive plant species thrive where the continuity of a natural ecosystem is breached and are abundant on disturbed sites like construction areas and road cuts.
26. **Large Woody Debris.** (LWD). Large woody debris including tree boles, root wads, and large branches, has been recognized as an important structural component of stream systems for both stream stabilization and habitat restoration.
27. **Lucustrine.** The environment of a lake.
28. **Meander.** A bend in a river, also known as an oxbow loop. A stream or river flowing through a wide valley will tend to form a *meandering* stream course as it alternatively erodes and deposits sediments along its course. The result is a *snaking* pattern as the stream meanders back and forth across its floodplain. When a meander gets cut off from the main stream body, an oxbow lake is formed.
29. **Native Aquatic and Shoreline-Dependent Wildlife Habitat.** The shoreline provides habitat for a variety of species. Habitat functions may include but are not limited to: space or conditions for reproduction; resting, hiding and migration; and food production and delivery.

30. **Native Plant Community.** The collective product of individual plants indigenous to a particular locale responding to shared habitats.
31. **Neotropical birds.** Account for 340 of the 600 species of birds that breed and nest in North America. These birds migrate each fall to warmer climates in tropical regions of Mexico, Central America, South America, and the Caribbean.
32. **No Net Loss.** Ecological functions recognize that any ecological system is composed of a variety of interacting physical, chemical and biological components, that are interdependent in varying degrees and scales, and that produce the landscape and habitats as they exist at any time.” When more development is proposed than can be reasonably expected to have impacts not anticipated and mitigated by the regulations of the SMP, the resources that may be affected must be identified and mitigated sufficiently to assure no net loss of shoreline ecological functions.
33. **Ordinary High Water Mark.** The OHWM is a line usually identified by examining the bed and banks of the water along the shore to determine where action of the water has created a distinct mark upon the soil with respect to upland vegetation
34. **Palustrine.** Palustrine systems include any inland wetland which lacks flowing water.
35. **PCB's.** A group of man-made chemicals historically used as insulating fluids or coolants and lubricants in transformers, capacitors and other electrical equipment. They have also been used in hydraulic oils, fluorescent lights, inks, carbonless paper and other uses. Manufacture of PCBs stopped in the U.S. in 1977 (Ecology 2005).
36. **Priority Habitats.** Are habitat areas determined by WDFW to have unique or significant value to many species and that meet one or more of the following criteria:
37. **Properly Functioning Condition (PFC).** Represents the physical ability of a reach to withstand a 25-30 year hydrological event. Properly functioning reaches have characteristics such as: well established riparian vegetation; an active floodplain; and stable channels. Sites considered to be properly functioning may not provide other important ecological or biological values and functions.
38. **Reach.** An expanse, or widening, of a stream or river channel. This commonly occurs after the river or stream is dammed. A reach is similar to an arm.
39. **Riparian function.** The interaction of various hydrologic, geomorphic, and biotic processes across a range of spatial and temporal scales within the riparian environment. As a result, riparian function encompasses a variety of processes that determine the character of the riparian zone and exert influence on the adjacent aquatic and terrestrial environment. The flow of sediment, water, wood, and energy into and out of the riparian zone is controlled by climatic, geologic, topographic, vegetative, and management-related factors.
40. **Riparian Zone.** The riparian zone provides important stream shading through canopy closure over the shoreline, habitat for invertebrates that provide forage for fish and wildlife, habitat for terrestrial species, surface water runoff filtering, and structural stability of stream banks.
41. **Riverine.** Associated with a river.
42. **Scree slopes.** Broken rock that appears at the bottom of crags, mountain cliffs or valley shoulders, forming scree slopes. The term scree is generally used interchangeably with talus, though scree often refers to rocks that are smaller than a volley ball).
43. **Sessile aquatic species.** Sitting on stem.
44. **Shoreland.** The area 200-feet horizontally landward from the Ordinary High Water Mark (OHWM).
45. **Shoreline vegetation.** Both within the riparian zone and the adjacent upland areas, serves the following functions: maintaining temperature; removing excessive nutrients and toxic compound; sediment removal and stabilization; attenuation of flow energy; and providing large woody debris and other organic matter.
46. **Shorelines of Statewide Significance.** For rivers east of the Cascade Mountain Range crest, “those natural rivers or segments thereof where the mean annual flow is two hundred cubic feet

per second (cfs) or more; or the portion of the rivers downstream from the first three hundred square miles of drainage area, whichever is less.”

47. **Shorelines of the State.** Shorelines of streams or rivers having a mean annual flow of 20 cfs or greater.
48. **Shorelines.** Include all upland areas called ‘shorelands’, which is the area 200-feet horizontally landward from the Ordinary High Water Mark (OHWM); floodway and contiguous floodplain areas; and all associated wetlands and river deltas (RCW 9.58.030(2)(f)).
49. **Surficial Geology Study (USGS).** Surficial geology is concerned with the description of the types and distributions of unconsolidated sediments across the landscape. This information is collected and maintained primarily in maps and databases. It is useful to hazard assessment, and land use planning.
50. **Total Maximum Daily Load (TMDL).** The maximum amount of any number of a variety of pollutants that a waterbody can assimilate without violating state water quality standards.
51. **Underground Storage Tank (UST).** And **Leaking Underground Storage Tank (LUST).** About 640,000 underground storage tanks (USTs) nationwide store petroleum or hazardous substances that can harm the environment and human health if the USTs release their stored contents. Leaking USTs (LUSTs) can leave considerable clean-up problems.
52. **Water Resource Inventory Area (WRIA).** Ecology was given responsibility for the development and management of these administrative and planning of these watershed boundaries.
53. **Watershed.** A drainage basin or catchment, meaning the region of land whose water drains into a specified body of water.
54. **Wetlands.** Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas

CITY OF SPOKANE SHORELINE MASTER PROGRAM UPDATE INVENTORY AND ANALYSIS

1.0 INTRODUCTION

1.1 Background

The State of Washington Shoreline Management Act (SMA), adopted in 1972, includes guidelines, goals, and policies to protect shorelines of the state. Shorelines include lake and marine shores, and streams with a mean annual flow greater than 20 cubic feet per second (cfs). In order to implement the SMA, local jurisdictions that govern shorelines are required to prepare Shoreline Master Programs (SMPs) that include the following broad-based policies:

- Encourage water-dependent uses.
- Protect shoreline ecological functions (no net loss).
- Promote public access.

A Shoreline Master Program is both a planning and regulatory tool. A Shoreline Master Program serves a planning function in several ways. First, it balances and integrates the objectives and interests of local citizens, which is why public participation is an important element of the plan update. Second, it addresses the full variety of conditions of the shoreline, including natural and man-made conditions. Third, it considers and where necessary to achieve the objectives of Revised Code of Washington (RCW) Chapter 90.58.240, influences planning and regulatory measures for adjacent land uses. Fourth, a Shoreline Master Program addresses conditions and opportunities for specific shoreline segments by classifying the shorelines into “environment designations” as described in Washington Administrative Code (WAC) 173-26-211.

Shorelines are considered among the most valuable and fragile of the state’s natural resources, and their utilization, protection, restoration, and preservation is important. Many ecological functions of river and stream corridors depend both on continuity and connectivity along the length of the shoreline, and on the conditions of the surrounding lands on either side of the river channel. Environmental degradation such as loss of vegetation and alteration of runoff quality and quantity along the corridor resulting from incremental floodplain development can degrade ecological functions downstream, thereby making the corridor inhospitable for priority species and susceptible to flooding, droughts, landslides, and channel changes. These conditions also threaten human health, safety, and property.

In 2003, the State Department of Ecology (Ecology) adopted new SMP guidelines that outline a “comprehensive process to prepare or amend shoreline master programs” in accordance with WAC 173-26-201. This inventory and analysis report is a part of the SMP update process.

History of the City of Spokane Shoreline Master Program: The original City of Spokane (City) SMP was adopted in 1975. The City revised the SMP in 1976, 1977, and 1979. A supplement to the SMP was adopted in 1982. The SMP supplement was a consolidation of the major sections of the SMP required to implement the SMP provisions. The supplement also served as a decision-making tool for the administrators of the SMP and shoreline landowners. In addition to regulations and administrative

procedures, the supplement contains ordinances and resolutions adopting the SMP, the Riverfront Development Program (adopted in 1975), and a map of the shoreline environment.

In 1994, after a series of five public workshops to consider the public impact by the SMP, the City of Spokane Plan Commission forwarded a draft SMP update to the City Council. Because of other priorities, the City Council did not review or adopt the updated SMP. However, several key issues were discussed and addressed during the workshop process. These issues included acquisition of private property for the creation of public pathways to access and traverse shorelines; planned pathways and relationship to neighborhood and other city plans; extending shoreline jurisdiction beyond 200 feet when lengthy, steeply sloping banks formed the shoreline; delineation and establishment of view points and corridors; and setbacks for institutional uses. The draft also included a system of Public Amenity Bonus Points by which a variance in setbacks could be granted. Considerations made for this system included a pedestrian emphasis, site and building design, landscaping, environmental improvement, cultural and entertainment, views, and historic properties.

The Shoreline Master Program (1975), the Supplement (1982), and the proposed revisions (1994) have been reviewed in conjunction with the current SMP update. Where applicable, pertinent information has been incorporated into the current update.

1.2 Shorelines of Statewide Significance

Shorelines of Statewide Significance are described in the definitions and concepts in RCW 90.58.030. For rivers east of the Cascade Mountain Range crest, they indicate “those natural rivers or segments thereof where the mean annual flow is two hundred cubic feet per second (cfs) or more; or the portion of the rivers downstream from the first three hundred square miles of drainage area, whichever is less.” Shorelines of the State are shorelines of all other streams or rivers having a mean annual flow of 20 cfs or greater. The Shorelines of Statewide Significance applicable to the City are Latah Creek (or Hangman Creek) and the Spokane River (WAC 173-18-360).

For Shorelines of Statewide Significance, the SMA directs local governments to manage shoreline uses in the following order of preference:

- Recognize and protect the statewide interest over local interest;
- Preserve the natural character of the shoreline;
- Result in long-term over short-term benefit;
- Protect the resources and ecology of the shoreline;
- Increase public access to publicly owned areas of the shorelines;
- Increase recreational opportunities for the public in the shoreline; and
- Provide for any other element deemed appropriate or necessary as defined by the SMA (RCW 90.58.020; WAC 173-26-250).

1.3 Project Area/Scope of Services

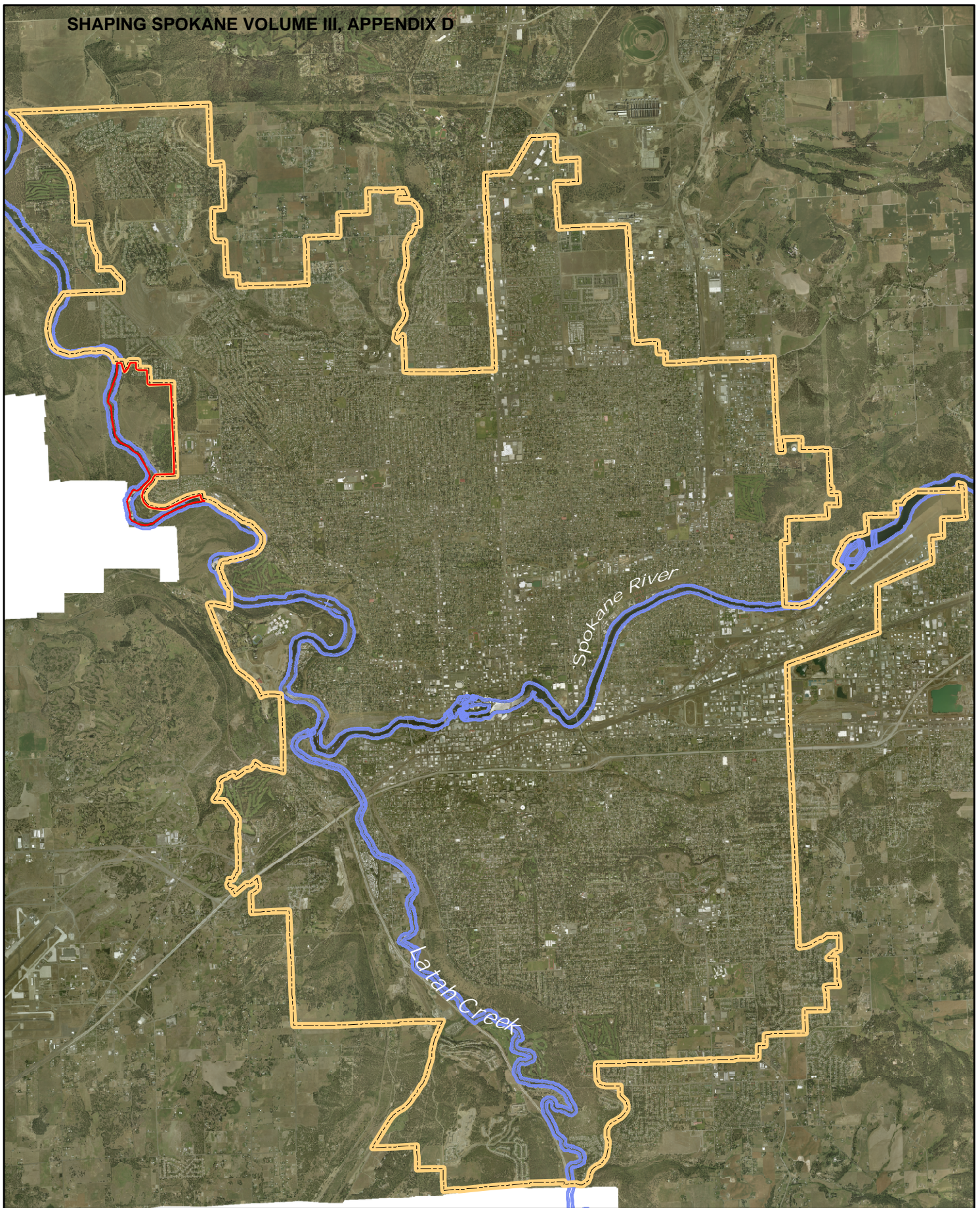
City shorelines included in this analysis are the Spokane River from the eastern City boundary (River Mile [RM] 81.2) to the northwestern City boundary (RM 62.9). The project area excludes the shorelines within Riverside State Park along the lower Spokane River, of which the Washington State Parks and Recreation Commission has jurisdiction. The City shorelines also include Latah Creek from the southern City boundary at Hatch Road (RM 8.1) to the Creek's confluence with the Spokane River at Peoples Park (RM 0.0). Figure 1-1 shows the shorelines within the City at the time the inventory was completed. Note that in July 2006, the City boundary was extended to the centerline of the Spokane River through Riverside State Park. This area is not shown on Figure 1-1.

The City contracted with URS Corporation (URS) to assist with the development of an update to the SMP. The scope of services for this project includes seven tasks: (1) Inventory and mapping of the City's shoreline conditions; (2) Analysis of inventory information; (3) Preparation of an analysis report and map portfolio; (4) Evaluation of cumulative impacts; (5) Assist the City with development of a restoration plan; (6) Assist the City with development of shoreline environmental designations; and (7) Assist the City with development of shoreline goals, policies, and regulations.

Task 1 has been completed and an inventory summary was submitted to the City in June 2006. The inventory, characterization, and analysis of the City's shorelines identify existing conditions, evaluates shoreline functions, and suggests areas where opportunities for conservation and restoration of ecological functions might be appropriate.


The inventory and analysis documents the existing conditions of the City's shorelines in 2006 and provides the framework for development of environmental designations, goals, policies, and regulations for the City Shoreline Master Program.


A significant amount of data has been collected recently on the Spokane River and Latah Creek (see Appendix A, *Data Inventory List*). Where possible, existing information was used to describe the characteristics of the City's shorelines; this data was supplemented by additional field work where required.



Legend

 Shoreline

 City Boundary

 July 2006 Annexation

0 0.5 1 2 Miles



Figure 1-1. Shoreline Within the City

City of Spokane
Shoreline Master Plan
March 2007

2.0 SHORELINE INVENTORY/METHODOLOGY

2.1 Shoreline Master Program Guideline Inventory Requirements

WAC 173-26-201(3)(c) addresses the requirements of a shoreline inventory conducted for a new or amended SMP. The rule specifies that the local government collect the following information provided it is relevant and reasonably available:

- Shoreline, adjacent land use patterns, transportation and utility facilities:
 - Extent of existing structures,
 - Impervious surfaces,
 - Vegetation and shoreline modifications,
 - Water-oriented uses.
- Critical areas:
 - Wetlands,
 - Aquifer recharge areas,
 - Fish and wildlife conservation areas (see Appendix E, *Supplemental Wildlife Information*),
 - Geologically hazardous areas,
 - Frequently flooded areas.
- Degraded areas and sites with ecological restoration potential.
- Areas of special interest:
 - Priority habitats,
 - Developing or redeveloping harbors and waterfronts,
 - Previously identified toxic or hazardous material clean-up sites,
 - Dredged material disposal sites,
 - Eroding shorelines.
- Conditions and regulations in shoreland and adjacent areas that affect shorelines:
 - Surface water management,
 - Land use regulations.
- Existing and potential shoreline public access sites:
 - Public access sites,
 - Public rights-of-way,
 - Utility corridors.
- Channel migration zones and floodplains:
 - Data gaps,
 - Land use changes relative to cumulative impacts.
- Archaeological and historic resources.

2.2 Inventory Process

The following inventory of the City's shorelines was completed:

- Development of a Quality Assurance Project Plan (QAPP) that outlined a process to:
 - Locate and review relevant data sources,
 - Determine the adequacy of previously collected data,
 - Collect new data.
- Conducted an analysis of existing data and data gaps.
- Created segment map books for use during field data collection.
- Completed field reconnaissance activities to fill data gaps.
- Prepared working digital maps of inventory information.

This work was completed and documented in the Task 1 Inventory Summary published in June 2006. The inventory process identified existing resources that adequately addressed each inventory element. As noted earlier, there is a significant body of work completed for both the Spokane River and Latah Creek systems, and this data was reviewed and incorporated where relevant.

Documents and Geographical Information System (GIS) data were selected for review from the comprehensive list of resources that addressed specific inventory elements. A review of each significant resource was completed and a data gap analysis was performed. A list of the documents and GIS data reviewed, as well as the data gap analysis, is provided in Task 1 Inventory Summary (URS, 2006).

Inventory elements not adequately addressed in existing resources were identified for field data collection. A field work plan was developed and two teams were assigned to data collection. The first team focused on Ordinary High Water Mark (OHWM) identifiers, eroded banks, shore protection such as bank armoring, combined sewer outfalls, potential fishery habitat, and unique shoreline features. The second team focused on wetlands, riparian vegetation, upland vegetation, and shoreline habitat. Both teams identified potential restoration opportunities. Field data was digitized into a GIS database. Digitized data met the specifications required by the City and Ecology.

2.3 Land Use Historical Summary

In addition to the shorelines inventory, an historical summary of land uses was prepared along the Spokane River and Latah Creek. The Spokane Public Library's Northwest Room provided much of the reference material.

2.3.1 Spokane River

Early Development along the Spokane River Shoreline

Fishing platforms constructed by local Native Americans were the first recorded structures to be built around the Central Falls shoreline of the Spokane River, and the salmon fishery at Spokane Falls sustained local Tribes for thousands of years. Campsites, fords and trails were other uses within the river corridor used by both indigenous populations and early explorers.

A small water-powered sawmill, sited on the south channel of the river, was built in 1872-73. Gradually, a store, saloon, post office, and several residences occupied the south bank of the river. The original plat for Spokane Falls was filed in 1878 and redrawn to qualify for incorporation in 1881. Expansion would continue with most of the platting along the Spokane River completed by the early 1900s.

Railroads, Water Power, the Central Falls, and Industry

The most profound alterations to the Spokane River's natural shoreline within the City of Spokane occurred prior to 1915. Gullies, ravines, and inlets had been filled, banks pushed out, construction-rubble dumped, retaining walls built, and riprap placed, to accommodate utility corridors, roadbeds and bridges. The most intense of this activity was focused in the area of the Central Falls and downtown, and the industrial and commercial districts. As an illustration of this intensity, twenty mostly railroad bridges were located within the area between the Iron Bridge and Monroe Street Bridge between 1881 and 1914. The railroads and street car companies, beginning with the Northern Pacific in 1881, constructed bridges and viaducts, laid track, built stations, depots, repair shops, and warehouses that covered much of the shoreline, or the rim above the shoreline, between the Iron Bridge to the east and the Summit point to the west. Water-powered industry including grain and lumber mills, laundry services, and breweries occupied the Central Falls eastward. Dams and diversion structures, flumes, and generating stations had been mostly developed by 1915; they occupied the shoreline and altered the flow of the river.

Shoreline Development beyond the Central Falls and Downtown

Impacts upriver and downriver from the Central Falls area downtown have been less intense except for the Upriver Dam and river pump station (1895), and the well pump station (1907). Generally, shoreline development outside the downtown area is associated with roads, bridges, and residential development. In 1990 the Centennial Trail was completed. The Centennial Trail parallels the river along much of the north shoreline upstream from downtown. More intense development included Natatorium Park (1887-1960), currently the Sans Souci Mobile Home Park located on the low terrace below Summit Boulevard; the River Run residential development west of Sans Souci (2004); and the City's sewage treatment plant along Aubrey White Parkway (1958). Aubrey White Parkway parallels the river on the east bank downstream of the Meenach Bridge.

Bridges that have been built across the Spokane River downstream from the Monroe Street Bridge include Twickeham Cable Car Bridge (wood, 1889-1894); the Seattle, Lakeshore, and Eastern Railroad Bridge (wood, ca. 1889, date of removal unknown); Waterworks Bridge (steel, 1916); the natural gas

bridge (1970s); Meenach Bridge (concrete, rebuilt in 1993); and the Sandifur Foot Bridge (2004. Note that the original bridge was constructed in the 1910s). Several other railroad bridges crossed the river west of Monroe Street but have since been removed.

Major structures in the upriver area include the Washington Water Power headquarters (1959); several apartment complexes separated from the river shoreline by Upriver Drive; Spokane Community College; and the Upriver Dam and pump station complex. In the river segment between the Iron Bridge and Monroe Street Bridge, bridges were constructed at Boone Avenue (wooden, ca. 1900, removed), Mission Avenue (concrete, 1909), and Greene Street (concrete, 1955). The Boone Avenue Bridge was removed and a Union Pacific railroad bridge now occupies its location.

Residential developments along the river were generally landward of roadways, such as Upriver Drive and South Riverton Avenue east of downtown; or on the terraces overlooking the river gorge west of downtown, including Fort Wright. Exceptions include Vinegar Flats along Latah Creek; Lower Crossing; and Peaceful Valley, wherein some houses built in the late 1890s and early 1900s sat on concrete and stone bulkheads at or over the water's edge. Occasional flooding prior to the dams, however, inundated properties along the river.

Neighborhoods bordering the river shoreline, including West Central, Hillyard, Chief Garry, Browne's Addition, and Logan, were separated by roads or by long steep slopes. In the established neighborhoods, this condition has changed little over the years.

Planning for the Shoreline

In 1907, the City's parks were placed under control of the newly formed Spokane Park Board. The Board hired the Olmsted Landscape Architecture Firm to design a park plan that was submitted in 1913. The plan suggested that, "the Spokane River and Latah Creek were valuable community assets whose shorelines and gorges held great promise if guided by the public good."

The Spokane Riverfront Development Program was initiated in 1967 following work that began in the late-1950s with the vision of reclaiming the potential of the Spokane River. The planning efforts in this program were the prelude to Expo '74 World's Fair (Expo) and the current Shoreline Master Program. The Development Program was adopted in 1975.

Expo '74 World's Fair - A Benchmark

Over the first several decades of the founding of Spokane, the river and shoreline of the Central Falls area had been used to dispose of everything from the rubble left from the great fire of 1889, to the streetcars that had been replaced by combustion vehicles, and other refuse from local industry. The falls and shoreline were barely visible beyond the many bridges that criss-crossed the river, and the concrete foundations of the mills and businesses that lined the shoreline. In 1969, a group of business leaders fought to improve the City's image and economy by restoring and developing the riverbanks in the Central Falls area.

Removal of the clutter from the Central Falls had become a reality in 1974 with the opening in Spokane of the Expo. The railroads had been consolidated on the historic Northern Pacific viaduct through downtown and a new high bridge over Latah Creek. The bridges, tracks, viaducts, stations, parking lots, and warehouses were removed from the Central Falls as well as peripheral shoreline areas. Large tracts of land along the south bank of the river were opened for parkland and commercial development for the first time in nearly 80 years.

The significant legacy of Expo is as a benchmark and a transition of attitude about the river, shoreline, and associated ecosystem. In terms of structures, the City was left with the U.S. Pavilion, IMAX Theater, Loeff Carrousel (rescued from Natatorium Park and restored), the Washington Street Bridge, Opera House and Convention Center, Double Tree Hotel, and the 100-acre Riverfront Park in the heart of the city.

Post Expo and Shorelines Master Program Development

The development pattern that was laid in the first four decades of the City's history had persisted for another six decades before it was reversed. Expo provided the inspiration, and the Shoreline Master Program provided the guidance. Little significant activity or change had taken place along the shorelines between the 1920s and the 1960s. The U.S. Postal Service general mail facility and garage occupied the former McGoldrick Mill site along the west bank near the intersection of Hamilton Street and Trent Avenue from the early 1960s through early 2000; the YMCA was constructed on Havermale Island in 1964; the Museum of Native American Culture (MONAC) was built in 1968; and several old mill structures and defunct railroad facilities were removed.

Immediately after Expo, the Travel Lodge (now River Inn) built in 1975 stretched along the south shoreline east of the Division Street Bridge. This project reclaimed land that had been occupied by the railroads. The redevelopment of railroad lands would be a recurring redevelopment scenario over the next few decades. A boardwalk along the riverbank was completed in the 1990s to connect what was known as the 'north loop trail', which ran beneath the newly constructed Division Street Bridge, and would later become part of the Centennial Trail.

Public reclamation had taken place during the preparation for Expo and continued with the expansion of the Convention Center in 1989 in the form of the International Agricultural Trade Center (Ag/Trade Center), and the expanded Exhibit Hall that opened in 2006. The original site of Sacred Heart Hospital and the Millgard Lumber Mill, followed by the Union Pacific tracks and warehouses and then parking lots, had become home to the City's convention business. The Double Tree Hotel (1974), Shenanigan's Restaurant, and the East West Arbor had already occupied the former rail yard.

East of Division Street, at the location of the former Union Pacific Railroad yards, a transition to a university campus began to take place. In 1986, a shoreline development permit (SSDP) was approved for the Riverpoint Office Park on 51 acres of land owned by Glacier Park, a development subsidiary of Union Pacific Railroad. Under this approval, Marriot Courtyard built a motel, and the Riverpoint One Office building was constructed. The orientation of the Riverpoint One Building, perpendicular to the river to minimize view impact, was a result of the shoreline review process.

In 1990, the City of Spokane purchased 72 acres of the Glacier Park property and set the stage for the Riverpoint Campus, which would become Washington State and Eastern Washington State Universities' Spokane campus. In 1991, a shoreline permit was approved to construct Spokane Intercollegiate Research & Technological Institute (SIRTI) just west of the Trent Street Bridge. In 1992, Riverpoint Village, a 119-unit residential condominium project was approved for a shoreline permit. Shoreline issues resolved by the public process involved public access from Riverpoint Boulevard to the shoreline and the Kardong Foot Bridge (former Great Northern Railroad Bridge); and the configuration of the Centennial Trail through the project site.

On the north bank of the river, Inn at the Park, the IBM Building, and Oxford Suites were built on the former Union Pacific property between Washington and Division Streets. A former warehouse would become a retail and office building, and a trail would run along the river's edge. In 2006, development began on a residential condominium immediately west of the Flour Mill; other residential housing in this area on both sides of the river has been discussed.

Farther upstream on the north bank, the former McGoldrick Mill site and Union Pacific tracks would be reclaimed by Gonzaga University (founded by Father Cataldo ca. 1881), to become the Jundt Art Museum, Hogan Center (2005), and Law School (1999). Gonzaga's campus would be further expanded with the removal of the former U.S. Postal Service post office facility, to include a baseball stadium. Gonzaga had also acquired the western half of the river bend area, known as the 'river loop,' from the City of Spokane and constructed a parking lot there in 2004. At the south end of the river loop is the former Spokane and Inland Empire Railroad/Great Northern Railway car barns and repair shops, and across the river, the Spokane Manufactured Gas & Fuel Company/American Tar site. Both sites are contaminated and awaiting re-use.

Development Downriver

West of downtown, the activity within the shoreline was less extensive and involved the recapture of riverfront land, the crossing of the river with a new sewer line, reclamation of a mining site, construction of a recreational bridge, development of a strategic plan, and cleanup of a former railroad site. As a result of the Olmsted Plan, the Spokane Parks Department began to purchase houses and a former casket factory along the Peaceful Valley shoreline to provide land for a future park and open space along the shoreline. Prior to Expo, the City acquired former home sites along Latah Creek near the confluence of the Spokane River to expand High Bridge Park. The City also traded land in 1992 to gain former home sites in Lower Crossing for open space expansion. For years, the Central Premix plant had excavated gravel along the west side of the river, to the south of Fort Wright. Planning efforts began in early 2000 to reclaim this area and develop a single-family neighborhood known as River Run. In 2004, a shoreline permit was issued for houses constructed along the west bank of the river. In 2003, the Sandifur Bridge and west link of the Centennial Trail were completed east of the confluence of Latah Creek and the Spokane River. At the same time, a planning effort was underway to complete the strategic plan for the Great Gorge Park, and to construct a whitewater recreational park near the confluence of Latah Creek and the Spokane River. The Olmsted Plan provided the basis for the 2005 Great Gorge Park Strategic Plan. While only partially located within the shoreline, the 78-acre Kendall Yards site, a former contaminated Union Pacific rail yard that occupied the terrace overlooking the river gorge, has been cleaned up through the

U.S. EPA Brownsfield program. Mixed residential and commercial redevelopment is currently being planned for the Kendall Yards site, and construction will be phased over the next thirty years.

2.3.2 Latah Creek

Latah Creek flows north from the farmlands of the Palouse region, crossing the City limits at Hatch Road Bridge where it continues through a deep gorge prior to reaching the confluence with the Spokane River. The Spokane River turns north near the confluence. Several houses and sheds are located just north of Hatch Road, east of the Creek along the toe of the bluff. Houses are located on the bluff overlooking the Latah Creek valley. The Creek meanders along the eastern base of the steeply-walled gorge, cutting deeply into the sand/gravel banks along some stretches. Within the Creek meander belt, State Route 195 (SR-195) grade embankments constrain the westward migration of the stream channel.

Aside from medium-density development in the Highland Park Estates on the easterly bluff, and the area between Hatch Road and Meadowlane Road, the area is pastoral in character. At Meadowlane Road, the uplands on the west side of SR-195 are transitioning to single-family residential clusters and commercial uses. Between SR-195 and the Creek, a relatively wide creek meander has created land area for the Bridlewood and Meadow Green subdivisions. The Creek at Qualchan, an 18-hole golf course through which the Creek meanders, is across and downstream from these subdivisions. The annexation of this area, and extension of water and sewer in the 1980s allowed the development of the golf course (1992), and the residential and commercial areas (commenced 1993).

The Creek channel is constricted between the SR-195 intersections of Qualchan Road and the Cheney-Spokane Road. During a re-routing of SR-195 in 1939, the roadbed created an embankment that separated a westerly oxbow from the Creek. Marshall Creek drains into this oxbow creating a wetland area. Sunny Creek Manufactured Home Park was constructed in the center of the oxbow in the 1990s. Latah Creek Plaza, a large shopping center located north of the oxbow between the Cheney-Spokane Road and SR-195 on the west side of Latah Creek, also constructed in the 1990s, replaced many of the Japanese immigrant vegetable and flower gardens that had occupied the area since the 1940s. East of SR-195 and the Cheney-Spokane Road intersection is Ted's Mobile Home Park that occupies a narrow bench between SR-195 and the Creek. North of the mobile home park is a concrete bridge providing access to a former farmstead and an Avista substation that occupies the foot of the slope between the Creek and the bluff.

North of the Burlington Northern-Santa Fe (BNSF) Railroad Bridge crossing located over the intersection of SR-195 and Inland Empire Way, Latah Creek crosses beneath a steel railroad bridge, meanders west to Inland Empire Way, and back towards the bluff. This area transitions to greenhouses and open fields with scattered single-family houses, with some small farmsteads dating to the 1890s. Houses and sporadic commercial land uses are generally located along the west side of Inland Empire Way. The area to the east between the roadway and the Creek, and along the shoreline, consists of greenhouses and small-plot agricultural uses such as flowers and vegetable crops.

The Northern Pacific Railroad (now BNSF) cut along the slope forming the east wall of the Latah Creek gorge. This section forms the Creek bank from about 29th Avenue north to 17th Avenue. At the bridge

crossing near 17th Avenue, the Creek turns to the west past Wentel Grant Park (1928) and runs along basalt cliffs that form the western bank. Chestnut Bridge and a 1904 brick commercial building mark the transition to single-family houses that extend along the Creek to the 11th Avenue Bridge. The area on the east side of the Creek was platted and developed around 1890 with the Union Brewery (removed) and a cluster of wood frame houses. By 1902, the Spokane Vinegar Works (removed) was operating several blocks downstream from this group of buildings.

High Bridge Park begins at the 11th Avenue Bridge flanking both sides of the creek as it shifts in a northerly direction to the bluff that forms Browne's Addition. At this point, three major concrete bridges, Sunset Bridge (1912), the Interstate 90 (I-90) Bridge, and BNSF Bridge rise from the valley floor to cross the Latah Creek gorge. These bridges were preceded by a low wooden bridge that connected 5th Avenue on the east bank of the Creek to 6th Avenue on the west bank; and a wooden trestle bridge that carried the interurban Washington Water Power Company street cars. North of these bridges, High Bridge Park is situated along the west side of the Creek, and a riprap-protected utility road forms the eastern boundary downstream to the Marne Bridge (1920) at Riverside Avenue. A ford, a shallow part of a body of water that may be crossed by wading, and a wooden bridge built around 1900 preceded the Marne Bridge. The Creek continues its northwesterly route to the confluence with the Spokane River. The area west of Latah Creek in this vicinity was platted in the 1890s and developed into a residential neighborhood.

3.0 ANALYSIS OVERVIEW

This section describes the key elements used to characterize and evaluate the City shorelines that are presented in this report. An understanding of these elements provides the necessary framework for the City to develop environmental designations, goals, policies, and regulations for the Shoreline Master Program.

3.1 Shoreline Jurisdiction

The City of Spokane's shorelines include the Spokane River and Latah Creek, and are regulated under the City Shoreline Master Program. Shorelines include all the water areas and the upland areas called 'shorelands', which is the area 200-feet horizontally landward from the Ordinary High Water Mark (OHWM); floodway and contiguous floodplain areas; and all associated wetlands and river deltas (RCW 90.58.030(2)(f)). (The OHWM is a line usually identified by examining the bed and banks of the water along the shore to determine where action of the water has created a distinct mark upon the soil with respect to upland vegetation.) (See Appendix G *Spokane River and Latah Creek Shoreline Photos* and Appendix H *Spokane River and Latah Creek Shoreline Maps*.)

The City jurisdiction can extend beyond the 200-foot limit if floodways and associated wetlands are present. A recent legal decision (*Samuel's Furniture, Jaffa Holdings, and City of Ferndale vs. Ecology* (Washington Court of Appeals Division I, 105 Wn. App. at 290) has indicated that readily available Federal Emergency Management Agency (FEMA) floodways are not sufficient for SMP jurisdiction. The shoreline jurisdiction can also extend to the landward edge of associated wetlands that are defined as wetlands that physically extend into the shoreline jurisdiction, or wetlands that are functionally related to the shoreline jurisdiction through surface water connection and/or other factors such as wildlife habitat.

The City can also include adjacent Critical Areas within the SMP so that they are managed under one plan.

The Channel Migration Zone (CMZ) needs to be addressed in SMPs. The CMZ is the area within which a river channel is likely to migrate or move over a period of time. The CMZ for Latah Creek is approximated by the meander belt that has been delineated by the Spokane County Conservation District.

A requirement of the SMP is that provisions be developed to limit development and shoreline modifications that interfere with channel migration. Interference with the natural processes of channel migration often has unintended consequences for human users through destruction of property; and fish and wildlife through loss of habitat. The meander belt for Latah Creek is included in this inventory and analysis. The Spokane River is entrenched and does not meander significantly, and therefore, a meander belt and CMZ has not been defined for the Spokane River.

3.1.1 Spokane River

The shoreline jurisdiction for the Spokane River is based on evidence of the OHWM determined by field observations that were used in conjunction with high quality aerial photography to digitize an approximate OHWM. The OHWM was then offset 200-feet landward to determine the City's shoreline jurisdiction. Existing GIS data layers for wetlands and critical areas were then evaluated to determine if the shoreline jurisdiction could be extended.

The shoreline jurisdiction based on this method is generally comparable to the old jurisdictional boundaries, but there are some areas that have been revised. This is possibly due to the inaccuracies in the previous interpretation of the OHWM and less detailed aerial mapping. The 2006 determination of the OHWM is considered a more accurate representation of the shoreline jurisdiction than the current mapping. It is recommended that where appropriate, the OHWM for individual developments be more accurately determined in the field.

The OHWM and proposed shoreline jurisdiction from the 2006 inventory for the Spokane River is included in Appendix H, *Map Portfolio*. Table 3-1 includes physical data from the shoreline jurisdiction.

Table 3-1
Spokane River Shoreline Master Program Jurisdiction

River Length (miles)	Shoreline Length (miles)	Area between OHWM and 200- foot buffer (acres)	Wetlands within OHWM and 200- foot buffer (acres)	Total Area within Shoreline buffer (acres)
18.1	33.4	850	5*	855

River Length = linear measurement following the center of the river.

OHWM = Ordinary High Water Mark.

*Includes Arthur Lake on Gonzaga Campus.

3.1.2 Latah Creek

The shoreline jurisdiction within the Latah Creek drainage is based on evidence of the OHWM. Latah Creek has a wide floodplain and associated wetlands; has an active channel migration zone (CMZ); has geologic hazards including erosion areas and steep slopes; and is associated with fish and wildlife conservation critical areas. Based on this information, the Latah Creek shoreline jurisdiction can be expanded beyond the OHWM.

- **FEMA Flood Maps** - Published FEMA flood maps were analyzed but found to be inaccurate in a number of locations. Based on the inaccuracies and the recent lawsuit stating that the FEMA floodway does not equate to the SMP jurisdiction, the FEMA information was not used.
- **Channel Migration Zone (CMZ)** - The CMZ or meander belt determined by the Spokane County Conservation District was digitized and added to the data layers. Ecology is currently determining the CMZ (September 2006) for Spokane County. This information can be used to update the GIS database when complete; RCW 9.58.030 does not recognize the CMZ as a part of the shoreline jurisdiction. The CMZ is recognized in City Ordinance C-32698 “Spokane Interim Fish and Wildlife Habitat Conservation Areas” which extends the Riparian Habitat Zone to the outer edge of the 100-year flood plain, the CMZ, or 250 feet, which ever is greater. The CMZ is important for the proper functioning of the creek.
- **Associated Wetlands** – Associated no-channel wetlands are not plentiful within the Latah Creek Valley. Where they were located, they have been added to the OHWM buffer.

The shoreline jurisdiction for Latah Creek, based on the OHWM and including associated wetlands and critical areas, is tabulated in Table 3-2. The shoreline jurisdiction for Latah Creek is wider in many cases than is currently indicated on the City shoreline maps. The Map Portfolio in Appendix H includes maps showing the OHWM, associated wetlands and the proposed shoreline jurisdiction.

Table 3-2
Latah Creek SMP Jurisdiction

	River Length (miles)	Shoreline Length (miles)	200-foot OHWM Jurisdiction (acres)	Associated Wetlands (acres)	Total Jurisdictional Area (acres)
OHWM	8.1	20.3	390	14.2	404

3.2 Shoreline Functions

One goal of the SMA is to protect the ecological function of the State’s shorelines. The paragraphs below provide an overview of the major ecological shoreline functions. They are provided to understand why areas might be impaired, and potential mechanisms for protection and rehabilitation.

The overall condition of the City shorelines was evaluated using the following processes and ecological functions described in the SMA.

- The distribution, diversity, and complexity of the watersheds, marine environments, and landscape-scale features that form the aquatic systems to which species, populations, and communities are uniquely adapted.
- The spatial and temporal connectivity within and between watersheds and along marine shorelines. Drainage network connections include floodplains, wetlands, upslope areas, headwater tributaries, and naturally functioning routes to areas critical for fulfilling life history requirements of aquatic and riverine-dependent species.
- The shorelines, beaches, banks, marine near-shore habitats, and bottom configurations that provide the physical framework of the aquatic system.
- The timing, volume, and distribution of large woody debris (LWD) recruitment in rivers, streams, and marine habitat areas.
- The water quality necessary to maintain the biological, physical, and chemical integrity of the system to support survival, growth, reproduction, and migration of individuals composing aquatic and riverine communities.
- The sediment regime under which aquatic ecosystems evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.
- The range of flow variability sufficient to create and sustain fluvial, aquatic, and wetland habitats, the patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows, and duration of floodplain inundation and water table elevation in meadows and wetlands.
- The species composition and structural diversity of plant communities in river and stream areas and wetlands that provide summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of large woody debris sufficient to sustain physical complexity and stability.

The following shoreline functions have been specifically identified in the Shoreline Master Program Guidelines (WAC 173-26).

Hydrology

Hydrologic functions of a shoreline include the transport of water and sediment across the natural range of flow variability; attenuating flow energy; developing pools, riffles, and gravel bars; and the recruitment and transport of large woody debris and other organic material.

Geomorphic processes induced by the hydrology create the in-stream structure that aquatic species have adapted to. Pools, riffles, glides, cover, and off-channel refugia are created through the movement of water at various flows. Each of these habitat elements together provides the complexity in a stream system that is necessary for the various species and life stages of aquatic organisms.

Hydrology defines, by its abundance or lack thereof, the physical limits of inundated aquatic habitat at a given time. Aquatic species have adapted to the natural fluctuations of inundated habitat, and may be adversely affected by dramatic shifts in flow volume or changes in the timing of higher and lower flows.

Shoreline Vegetation

Shoreline vegetation, both within the riparian zone and the adjacent upland areas, serves the following functions: maintaining temperature; removing excessive nutrients and toxic compound; sediment removal and stabilization; attenuation of flow energy; and providing large woody debris and other organic matter.

Riparian function can be defined as the interaction of various hydrologic, geomorphic, and biotic processes across a range of spatial and temporal scales within the riparian environment. As a result, riparian function encompasses a variety of processes that determine the character of the riparian zone and exert influence on the adjacent aquatic and terrestrial environment. The flow of sediment, water, wood, and energy into and out of the riparian zone is controlled by climatic, geologic, topographic, vegetative, and management-related factors. Shoreline management practices may alter the routing of these elements directly through management within the riparian zone or indirectly through management of upland areas.

The riparian zone serves as the primary source area for large woody debris. Large woody debris including tree boles, root wads, and large branches has been recognized as an important structural component of stream systems for both stream stabilization and habitat restoration. The riparian zone further provides important stream shading through canopy closure over the shoreline, habitat for invertebrates that provide forage for fish and wildlife, habitat for terrestrial species, surface water runoff filtering, and structural stability of stream banks.

Hyporheic Zone

The hyporheic zone within a shoreline provides the following functions: removing excessive nutrients and toxic compounds; water storage; support of vegetation and invertebrates; sediment storage; and maintenance of base flows.

The subsurface habitat, or hyporheic zone, is the interstitial habitat beneath the streambed that is the interface between surface water and the adjoining groundwater. Vertical and lateral dimensions of subsurface water movements are controlled by geologic structure, such as the relative permeability of underlying strata. Permeability in the floodplain and channel is variable due to erosional and depositional fluvial processes and such criteria as bedrock fracturing and deposition of till during the continental glacial period. However, duration of overbank flows and ponding is typically longer in higher-order watersheds such as the Spokane River, enhancing opportunities to transmit organic matter and nutrients from surface water to the hyporheic zone.

Hyporheic areas are important regulators of nutrient inputs to streams. The hyporheic zone, as a retention or storage compartment, provides a medium for biotic processing. Hyporheic zones act as sensitive indicators of ecological health since processes there substantially influence energy and nutrient resources in riparian forests and aquatic surface systems. Hyporheic zones can act as a nutrient sink, storage, or source depending on spatial location and season.

Native Aquatic and Shoreline-Dependent Wildlife Habitat

The shoreline provides habitat for a variety of species. Habitat functions may include but are not limited to space or conditions for reproduction; resting, hiding and migration; and food production and delivery.

Many ecological functions of river and stream corridors depend both on continuity and connectivity along the length of the shoreline and on the conditions of the surrounding lands on either side of the river channel. Environmental degradation caused by development such as improper storm-water, sewer or industrial outfalls; unmanaged clearing and grading; or runoff from buildings and parking lots within the watershed can degrade ecological functions downstream. Likewise, gradual destruction or loss of vegetation and alteration of runoff quality and quantity along the corridor resulting from incremental floodplain development can raise water temperatures and alter hydrographic conditions and degrade other ecological functions. This can make the corridor inhospitable for priority species and susceptible to catastrophic flooding, droughts, landslides, and channel changes. These conditions also threaten human health, safety, and property.

3.3 No Net Loss

In order to protect shoreline resources, the SMA has a requirement to achieve “no net loss of ecological functions necessary to sustain shoreline natural resources.” WAC 173-26-201(2)(c) states that the “concept of ecological functions recognizes that any ecological system is composed of a variety of interacting physical, chemical, and biological components that are interdependent in varying degrees and scales, and that produce the landscape and habitats as they exist at any time.” SMPs should, to the greatest extent feasible, protect existing ecological functions, and avoid new impacts to habitat and ecological functions before implementing other measures designed to achieve no net loss of ecological functions. When more development is proposed than can be reasonably expected to have impacts not anticipated and mitigated by the regulations of the SMP, the resources that may be affected must be identified and mitigated sufficiently to assure no net loss of shoreline ecological functions. In order to ensure no net loss of shoreline or ecological functions and/or uses, SMPs shall contain policies, programs, and regulations that address adverse cumulative impacts and fairly allocate the burden of addressing cumulative impacts among development opportunities.

3.4 Shoreline Use Analysis and Priorities

The SMP Guidelines require an analysis to characterize current shoreline use patterns and projected trends to ensure appropriate future uses. An evaluation of future demand for shoreline space and potential use conflicts is also required.

3.5 Cumulative Impacts

Cumulative impacts are prospective impacts from a proposed action that may be indirectly or directly related to the action and, when taken together, may constitute or result in short-term or long-term impacts. Evaluation of cumulative impacts should consider:

- Current circumstances affecting the shorelines and relevant mutual processes.
- Reasonably foreseeable future development and use of the shoreline.
- Beneficial effects of any established regulatory programs under other local, state and federal laws.

An evaluation of cumulative impacts on ecological functions should consider the effects caused by unregulated activities; developments exempt from permitting; and effects such as the incremental impact of residential bulkheads, residential piers or docks, or runoff from newly developed properties. Commonly occurring or foreseeable cumulative impacts should not result in a net loss of ecological functions of shorelines. In order to assure no net loss of ecological functions necessary to sustain shoreline natural resources, SMPs should establish and apply the following:

- Environmental designations with appropriate use and development standards.
- Provisions to address the impacts of specific common shoreline uses, development activities, and modification actions.
- Provisions for the protection of critical areas within the shoreline.
- Provisions for mitigation measures and methods to address unanticipated impacts.

3.6 Potential Rehabilitation/Restoration Actions

A feature of the SMP guidelines is the requirement that local governments include a “real and meaningful” strategy to address shoreline restoration in their amended SMP (WAC 173-26-186(8)(C)). The guidelines specify how the policies in an SMP must appropriately promote “restoration” of impaired shoreline ecological functions (WAC 173-26-201(2)(F)). The reach descriptions in Sections 4.0 and 5.0 identify potential restoration areas. Generally, two strategies are used for improvement of shoreline function: restoration and protection. These strategies may be combined to improve function. Shoreline protection and restoration activities should be coordinated with established basin-wide projects and priorities to improve overall watershed health, in addition to enhancing shorelines within the City jurisdiction.

Protection typically consists of a policy action that might include zoning or other land use action to preserve existing functions, and allow natural restorative processes to re-establish or maintain function at a given site. Protection may also involve capital outlay in the form of land set-asides or permanent easement acquisition such as a conservation easement.

Restoration includes a range of actions and measures designed to improve shoreline function to potentially self-sustaining levels. Basic approaches to restoration include:

- Non-intervention and undisturbed recovery.
- Partial intervention for assisted recovery.
- Substantial intervention for managed recovery.

The SMP guidelines require the identification of specific opportunities to improve shoreline function. Opportunities can include protection, restoration, and other land use-related opportunities such as increased public access and development of water-oriented uses. Potential opportunities identified during the shoreline inventory and characterizations are included in sections 4.0 and 5.0.

4.0 SPOKANE RIVER CHARACTERIZATION AND FUNCTIONS

This section presents the shoreline characteristics and functional analysis for the Spokane River. The section begins with a general description of the Spokane River and then provides detailed narrative of the inventory components and functional elements for each of the river reaches developed for the inventory. (A reach is an expanse of a stream or river channel.) Figure 4-1 shows the seven reaches for the Spokane River that were delineated for the inventory. The Map Portfolio in Appendix H includes maps showing the significant features discussed in the inventory narrative.

For each inventory reach the following format is followed:

- The first section provides a description of each inventory element and along with the tables provided in Appendix B and the Geographical Information System (GIS) layers developed, provides a comprehensive inventory of both the built and natural environments.
- The second section characterizes the ecological functions within each reach, focusing on the elements discussed in WAC 173-26-201(3)(d)(C).
- The third section provides an assessment of the ecological functions focusing on the elements discussed in WAC 173-26-201(3)(d)(D).
- The fourth section provides specific observations, and describes potential opportunities for protection and restoration of shoreline functions.

4.1 Spokane River Overview

The Spokane River begins at Coeur D'Alene Lake, Idaho and flows west to Spokane where it turns north and then west where it flows into the Columbia River. The drainage basin or watershed east of Spokane is about 4,290 square miles, and includes the Coeur d'Alene, St. Joe, and St. Maries Rivers. Flows vary seasonally reaching over 25,000 cfs in the spring to less than 1,000 cfs during the summer (USGS gauge 12422500). The highest recorded daily mean flow was 49,000 cfs and the lowest was 50 cfs. Six dams are located on the Spokane River. Post Falls Dam downstream from Coeur d'Alene Lake located in Idaho controls Spokane River flows for approximately six months during the summer and fall when flows are less than 5,000 cfs. Figure 4-2 shows the Spokane River drainage basin.

Land use within the basin includes mining in the upper reaches of the Coeur d'Alene River watershed; forest and related forestry practices along the St Joe River; agriculture and grazing activity throughout the region; and urbanization along much of the length of the Spokane River. Latah Creek is the only tributary to the Spokane River within the City. There are no other major tributaries associated with the Spokane River upstream of the City. Streams that flow into the Spokane Valley through which the Spokane River flows drain into the gravels that form the Spokane Valley/Rathdrum Prairie Sole Source Aquifer prior to reaching the River.

Within the city limits, the Spokane River can be divided into the Upper Spokane (upstream from Spokane Falls), the Middle Spokane (Spokane Falls area), and the Lower Spokane River (downstream from the Falls) based on geology, land use, and vegetation. For inventory and analysis purposes, each section is

further subdivided into inventory reaches discussed later in this section (see Figure 4-1, *Spokane River Inventory Reaches*).

4.1.1 Upper Spokane

The shoreline of the Upper Spokane River is characterized by small to medium-sized gravel banks with a few sandy beaches. The Upper Spokane has moderate to well-vegetated river banks, containing a variety of native and non-native plant species. Downstream of Hamilton Street, the river enters the basalt substrate that forms the Spokane Falls. The Spokane County *Proper Functioning Condition* (PFC) Assessment, prepared by the Spokane County Conservation District (SCCD), rates the Upper Spokane in *proper functioning condition*, and its ecological condition as generally fair.

The Upper Spokane is developed with a variety of residential, commercial, and industrial land uses. The majority of the shoreline is easily accessed, and dispersed use is relatively intense due to adjacent residential development. Common recreational shoreline uses include jogging/walking and sightseeing, picnicking, and swimming according to the Avista Recreation Facility Inventory and User Surveys Report, April 2004. Other common uses include angling, birding, and canoeing/kayaking. Transportation and major utility corridors are present on both sides of the river within the 200-foot shoreline buffer. Large portions of the shoreline are publicly owned and managed.

4.1.2 Middle Spokane

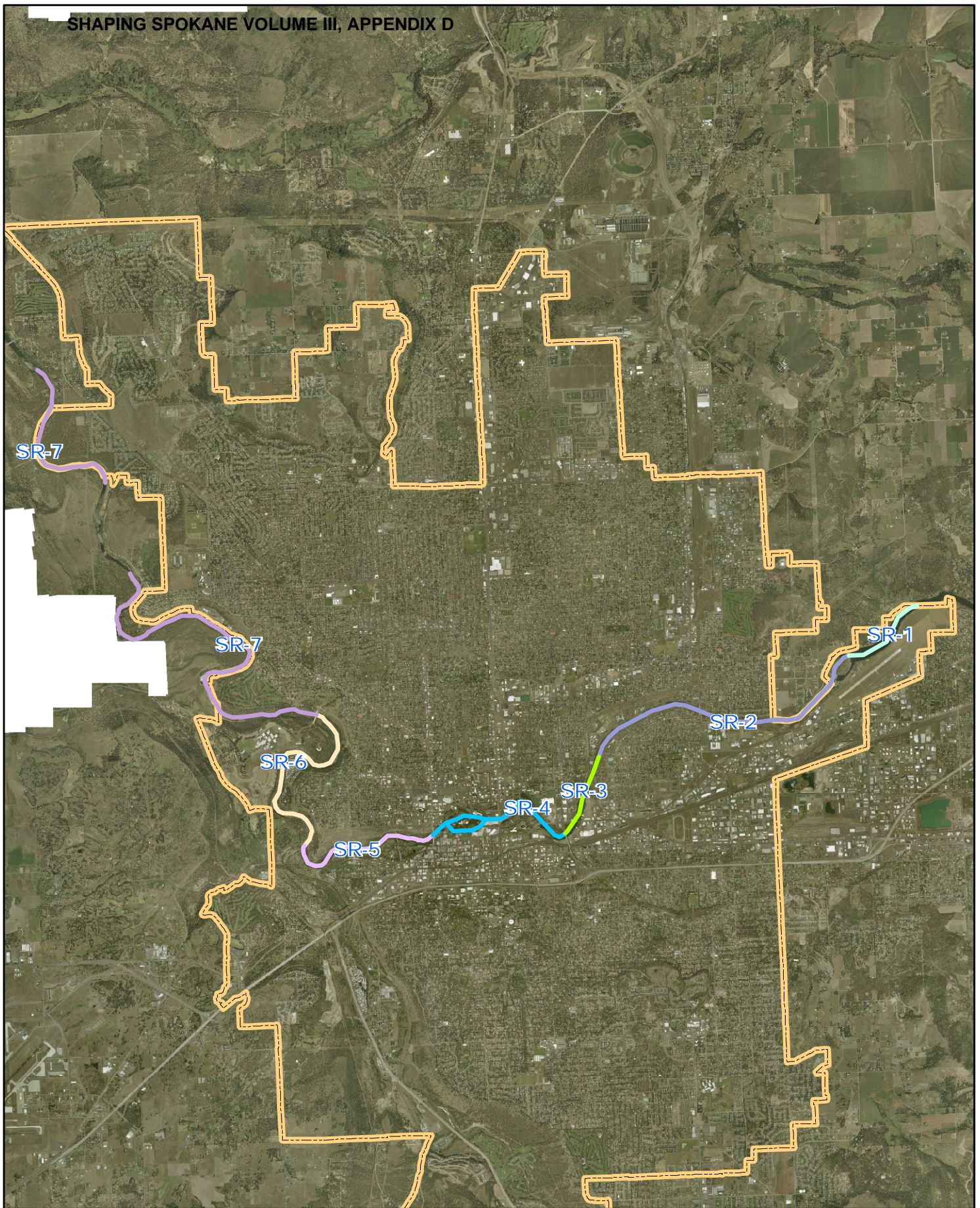
The Middle Spokane River is characterized by basalt substrate that forms the river channel and creates the Spokane Falls. The Spokane Falls are significant culturally and environmentally. This is the City Center, and the urban environment and adjacent shorelines have experienced numerous modifications over the past century. Avista hydropower operations, commercial land use, and high-density residential developments are located here. Roads, paved parking, and bridges impact the shorelines within this reach. Substantial portions of the shoreline are privately owned. Public access to the shorelines is generally good due to the City-owned Riverfront Park and Centennial Trail located along much of this section. In general, high intensity recreation and community uses are found in this area. Direct access to the river is limited in some locations due to steep, nearly vertical banks. For public protection, direct access to the river between Spokane Falls and Division Street is prohibited by City Ordinance. Though much of the area is already developed, development pressure is considered to be high in this vicinity. The SCCD PFC Study rates much of the Middle Spokane as being in *proper functioning condition*, and its ecological rating as poor to fair through much of its length.

4.1.3 Lower Spokane

The Lower Spokane River is characterized by a deep, entrenched gorge cut through late Pleistocene glacial out-burst flood deposits including unconsolidated sands, gravels, and cobbles through much of its length. The shoreline between Spokane Falls and the River confluence with Latah Creek, known as the Great Gorge, is characterized by a steep bank partially created by railroad fill placed on the north bank at the turn of the 20th century. The north shore is difficult to access and retains significant areas of native

vegetation. The south slope adjacent to the Peaceful Valley Neighborhood is steep and heavily vegetated; however, a low-lying level area is located at the base of the south slope, which is where the Peaceful Valley Neighborhood is located. The River is relatively easy to access from the Peaceful Valley neighborhood. Use is considered moderate and mostly consists of neighborhood residents. Lack of parking limits use for non-residents. Shorelines have been altered but retain a natural character. Substantial residential and mixed-use development is anticipated at the east end of this reach near the City Center.

Downstream from the Latah Creek confluence, much of the river has retained a natural character, although some residential and other development is present. This is apparently due to the high steep banks, limited road access, and the location of Riverside State Park along much of this reach. The SCCD PFC Assessment rates the Lower Spokane as being in *proper functioning condition*, and in good ecological condition, with much of it being considered high quality. Recreational use of this section of the river is considered moderate. Much of the area is publicly owned and accessible. Common recreational uses include jogging/walking and sightseeing, picnicking, and swimming according to the Avista Recreation Facility Inventory and User Surveys Report, April 2004. Other common uses include angling, birding, and canoeing/kayaking. The Lower Spokane River and its shorelines are an important recreational area for the City and the region due to its relatively natural environment.



Legend

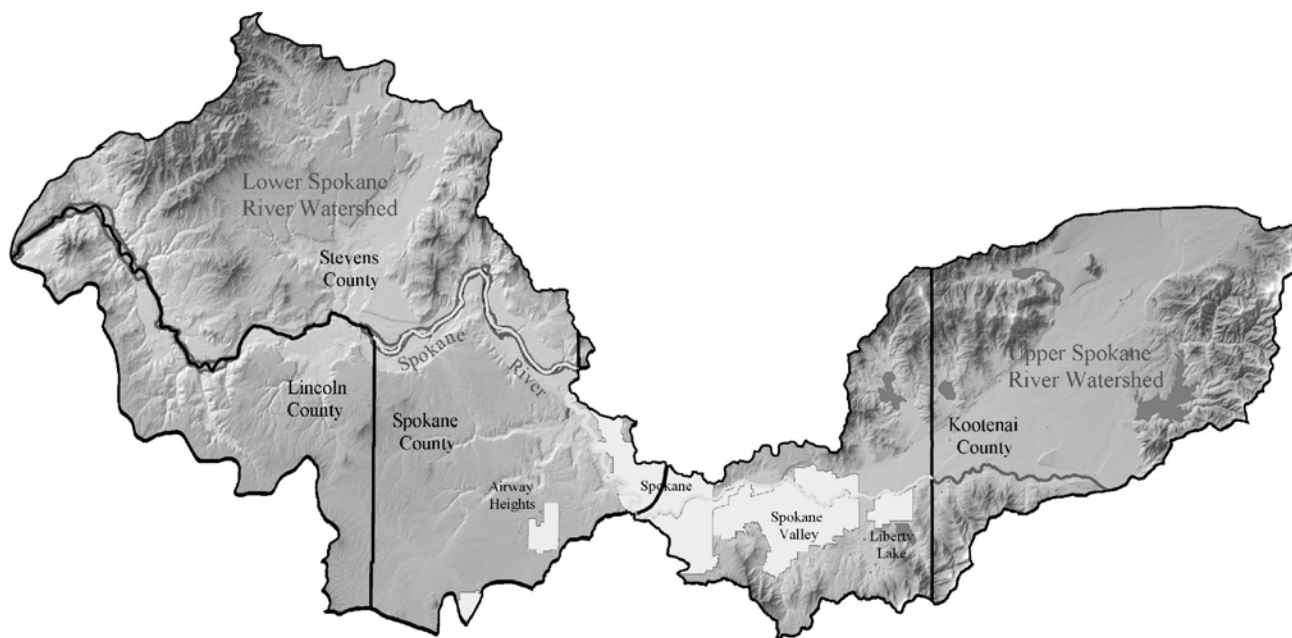
 City Boundary



0 0.5 1 2
Miles

Figure 4-1. Spokane River Reaches

City of Spokane
Shoreline Master Plan
March 2007



Source: Spokane County PFC Assessment, 2005

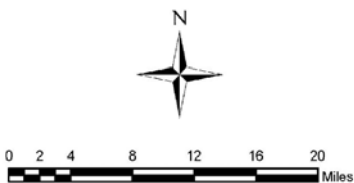


Figure 4-2. Spokane River Basin

City of Spokane
Shoreline Master Program
March 2007

4.2 Spokane River Ecosystem-Wide Processes

Identifying ecosystem-wide processes that affect the shoreline is part of the comprehensive process of amending a shoreline master program. WAC 176-26-201(3)(c)(i) defines the processes that must be identified and assessed to determine their relationship to ecological functions present within the SMP jurisdiction. WAC 176-26-201(3)(c)(i)(II) defines the scope of identification and assessment to be used. It states: “This characterization of ecosystem-wide processes and the impact upon the functions of specific habitats and human health and safety objectives may be of a generalized nature.” The following elements were identified as important to the Spokane River SMP jurisdiction to meet the requirements of WAC 176-26-201(3)(c)(i).

4.2.1 Study Area Geology

The geology of the Upper Spokane River study area is dominated by late Pleistocene glacial outburst flood gravels that comprise the Spokane Valley. The river flows in a shallow incised inner valley within the wider valley floor. These flood gravels constitute the matrix of the Spokane Valley-Rathdrum Prairie Sole Source Aquifer. The Middle Spokane River study area is defined by the Miocene Columbia River basaltic ledges that form the Spokane Falls. The Lower Spokane is predominately comprised of Pleistocene glacial outburst flood deposits. The Lower Spokane has cut a deep valley through these unconsolidated sands, gravels, and cobbles (Avista 2005).

The connection of the Spokane Valley/Rathdrum Prairie Aquifer is an important facet of the geology of the Upper Spokane River. From the source of the river at Lake Coeur d’Alene to the confluence of Latah Creek, there are no permanent tributaries providing input to the river system. There is considerable interaction, however, between the aquifer and the river. It is estimated that due to the river-aquifer exchange between the Idaho-Washington border and the Sullivan Road Bridge, stream flow losses of about 100 cfs occur during low-flow conditions and about 570 cfs during high-flow conditions. Between the Trent and Greene Street Bridges, stream flow gains range from 260 cfs in November to 450 cfs in July (Gearhart 2001). These gains and losses affect stream flow, water temperature, and water quality.

4.2.2 Hydrologic/Stream Channel

The Spokane River is hydrologically stable. It is moderately to highly-entrenched, with little floodplain development. The majority of the river bed is comprised of large cobbles, boulders and bedrock (SCCD 2005). The stream channel was formed during the Pleistocene catastrophic glacial outburst floods and has not been significantly altered because the permeable character of the surrounding landscape does not promote surface drainage (USGS 2002). The SCCD PFC Inventory and Assessment rates the entire river within the study area in *proper functioning condition*.

4.2.3 Vegetative Communities

Vegetation along the Spokane River can generally be described as Ponderosa pine savanna on the north slopes, Douglas fir mixed forest on the south slopes, and riparian and wetlands along the river shoreline. The existing forest cover is essentially a dry belt-type consisting of Ponderosa pine and Douglas fir with grass and shrubs. Large areas at the shoreline remain naturally vegetated, although much of the shoreline is located within urban areas and has been disturbed. Based on information from the Natural Resources Conservation Service (NRCS), vegetation found within the shoreline corridors can be categorized as shown in Table 4-1, *Vegetative Communities SR-1*. (Natural Resources Conservation Service Vegetation within the Spokane River and Latah Creek Shoreline Corridors.)

TABLE 4-1: Vegetative Communities SR-1

- | | |
|------------------|--------------------------------------|
| • Ponderosa pine | • bluebunch wheatgrass |
| • poplar | • bluegrasses |
| • willow | • Idaho fescue |
| • serviceberry | • pinegrass |
| • Wild's rose | • lupine |
| • ninebark | • native yellow trefoil (lotus) |
| • chokecherry | • quackgrass |
| • hawthorne | • reed canarygrass (at water's edge) |
| • black locust | • other native plants |
| • balsamroot | |

Thin, relatively continuous bands of riparian and upland vegetation characterize vegetation along the Upper Spokane. The vegetation is in relatively good condition, providing habitat for wildlife and benefiting fisheries. Within this reach, non-native species are present but do not dominate. A few areas of invasive non-native species were noted. Vegetation in the Middle Spokane is sparse, in part due to the presence of bedrock, and also because of the development history of the area. Most of the vegetation along the shoreline has been altered within this area. The Lower Spokane is characterized by relatively thin, continuous vegetative communities in the upper section that broaden to wider upland type communities such as Ponderosa pine, in the downstream sections. There are extensive areas, particularly along the Lower Spokane where remnants of native ecology can be studied, and that information applied to restoration of disturbed areas.

Important wildlife communities found along the Spokane River include bats, neotropical birds, aquatic mammals and waterfowl, and reptiles and amphibians (herps) according to the Washington Department of Fish and Wildlife (WDFW). Wildlife noted in the area includes deer, moose, mink, beaver, osprey, bald eagle, great blue heron, large concentrations of waterfowl, and neotropical songbirds. The confluence with Latah Creek provides a rich and productive wildlife area. Farther downstream, reptiles and amphibians have been noted.

4.2.4 Water Quality

Water quality in the Spokane River is a result of natural influences such as the aquifer interchange, upstream influences such as mining and logging, and urbanization activities within the City. Water quality in the river is impaired as documented in the Federal 2004 303(d) list and the State 305 list. The impact of these water quality impairments on the shoreline environment is not well documented.

Water Quality Exceedances (303(d) listings)

Within the study area, the Spokane River is on the State of Washington Impaired Waters list, or Federal 303(d) list for fecal coliforms, dissolved oxygen (DO), temperature, total polychlorinated biphenyls (PCBs) and zinc. Major issues affecting water quality include:

- Metals contamination from mining activities in the upper watershed;
- PCB contamination;
- Wastewater combined sewer overflows (CSOs) and stormwater point discharges;
- Non-point source contributions including septic tank effluent and urban stormwater runoff.

Metal Contamination

Sediments in much of the Spokane River are contaminated with metals from mining and milling activities in the Coeur d'Alene Basin. Spokane River sediments have high concentrations of arsenic (As), cadmium (Cd), copper (Cu), lead (Pb), mercury (Hg), and zinc (Zn). Metal concentrations in the river generally increase during high spring flows (USGS 1998). Metal contamination impacts public use of the river and its shorelines. The Washington Department of Health (WDOH) and the Spokane Regional Health District (SRHD) have issued an advisory to reduce exposure to shoreline sediments along portions of the River upstream of the study area due to the presence of arsenic and lead at concentrations that pose a human health risk. The Basin Commission is involved in developing clean-up plans for areas of contamination in Idaho. In Washington, the Department of Ecology (Ecology) and the U.S. Environmental Protection Agency (EPA) are involved in developing cleanup plans.

PCB Contamination

Sediments within the study area also contain PCBs. PCBs are a group of man-made chemicals historically used as insulating fluids or coolants and lubricants in transformers, capacitors, and other electrical equipment. They have also been used in hydraulic oils, fluorescent lights, inks, carbonless paper, and other uses. Manufacture of PCBs stopped in the U.S. in 1977 (Ecology 2005). There is currently an advisory issued by the WDOH and the SRHD to avoid or limit consumption of fish in parts of the Spokane River due to elevated PCB levels. Ecology is in the process of developing a Total Maximum Daily Load (TMDL) allocation for PCBs in the Spokane River. In addition, this year (2006), they have overseen the capping of PCB sediments behind Upriver Dam, and cleanup of contaminated sediments at Donkey Island.

Dissolved Oxygen (DO)

Areas of the Spokane River do not meet water quality criteria for dissolved oxygen (DO). These areas are located above Upriver Dam (RM 79.9), above Spokane Falls (RM 74.8), and in Lake Spokane (downstream from the City at RM 60.9). A TMDL Limit (2006) has been tentatively agreed to reduce

phosphorous loading to the river from both point and non-point contributors in order to improve DO levels.

4.2.5 Regional Impacts to Shorelines

The natural functions of the City's shoreline are affected by both regional and city-wide influences. Major influences upon the City shorelines are summarized below.

- *Hydroelectric Dams*

Upstream of the City is Post Falls Dam owned by Avista Corporation. Within the City limits are Upriver Dam (City owned), Upper Falls Dam (Avista Corp.), and Monroe Street Dam (Avista Corp.). Downstream of the City is Nine Mile Dam, Long Lake Dam, and Little Falls Dam. Post Falls Dam, located approximately seven miles downstream from Coeur D'Alene Lake, regulates summer and autumn flow into the Spokane River.

On the eastern City limits, Upriver Dam impounds water creating a narrow lake (105 acres) with a relatively stable water elevation. Upper Falls (150 acres) and Monroe Street (5 acres) Dams are located in the center of Spokane. They are operated as run-of-the-river facilities and do not impound significant amounts of water. As with Upriver Dam, these dams and associated structures are located along the shoreline. Nine Mile Dam, while located outside the City limits, impounds water upstream and across the northwestern boundary of the City.

- *Land Use, Urbanization, and Population Growth*

There is increasing interest in development along the shoreline and adjacent areas. Within the City, major developments proposed or under construction along the Spokane River include the construction at Spokane Community College, the Iron Bridge development, the baseball stadium at Gonzaga University, the new Convention Center, condominiums by the Flour Mill, the Kendall Yards mixed use development, construction in the Peaceful Valley Neighborhood, the River Run residential development, improvements to the Spokane Wastewater Treatment Plant, and at Riverside State Park. Shoreline development has the potential to alter public open space, vegetation, and view corridors, resulting in increased need for utility and transportation services and urban runoff.

- *Transportation and Utilities*

Transportation and utility corridors are located parallel to the river and cross it at many locations. Transportation and utility corridors intersecting the shoreline area have impacts on shoreline function during construction, operation, and maintenance.

As a result of traffic, roads and bridges generate noise and pollutants and require periodic maintenance; they also result in disruption of the natural environment. In an urban setting, with appropriate design and location, roads and bridges can provide a means to limit significant adverse environmental impacts while providing needed transportation and utility functions. Utilities include water, sanitary sewer, storm drains, natural gas, and electric and other transmission and distribution lines.

- *Storm Drainage and Urban Runoff*
Urbanization results in increased impervious cover, resulting in increased stormwater runoff and generation of pollutants. Within the Spokane/Rathdrum Valley, stormwater runoff is typically discharged into bio-infiltration (208) swales and drywells and has little direct impact on the river or shoreline. As urbanization increases, stormwater is conveyed to the river through storm drains. Storm drain outfalls are located along the shoreline and require periodic access for monitoring and maintenance.
- *Combined Sewer Overflows (CSOs)*
Combined sewers convey both sanitary and stormwater flows. Combined sewers were constructed in Spokane, as in many other communities during the late 1800s and the early 1900s. CSOs are located in the combined sewer system to discharge excess flows directly to the river during storm events, protecting the sewer system from damage. CSOs discharge to outfalls located along the shoreline. The City of Spokane is currently planning, designing, and constructing CSO reduction facilities. Some of these facilities are anticipated to be located within the shoreline jurisdiction.
- *Wastewater*
The wastewater system includes sanitary and combined sewer lines, lift stations, and wastewater treatment plants. Wastewater dischargers along the Spokane River include:
 - City of Coeur d'Alene Wastewater Treatment Plant (WTP);
 - Hayden Area WTP;
 - Post Falls WTP;
 - Liberty Lake WTP;
 - Kaiser Aluminum WTP;
 - Inland Empire Paper WTP; and
 - City of Spokane WTP.

The City of Spokane Wastewater Treatment Plant, the largest discharger on the river, is located within the study area along the Lower Spokane River.

4.3 Spokane River Inventory

The inventory descriptions for each inventory reach include the area between the 200-foot buffer on each bank of the river, as determined by the Ordinary High Water Mark (OHWM). Inventory data tables located in Appendix B were prepared from GIS information collected from agencies and developed from field work conducted in June 2006. Appendix B also includes a description of each of the reach parameters. The sections below describe significant features of the built and natural environments determined by the shoreline inventory. Following the narrative description of the inventory information, characterization and assessment of ecological functions is presented. Each inventory reach description also contains a subsection that identifies observations and potential protection and restoration opportunities.

The SCCD PFC study was a significant resource used for the inventory. The SCCD study divided the river into study reaches as does this inventory. In most cases, the SCCD study and City of Spokane Inventory reaches are slightly different since the goals and purposes of each are different. Conclusions made in the PFC study address each of its study reaches as a whole and at any one point the evaluation of *proper functioning condition* and ecological condition may vary from the reach as a whole. Since the defined reaches are slightly different, the City of Spokane Inventory represented the SCCD information as coverage percentages, for example, an inventory reach might be noted as being in 80 percent fair ecological condition and 20 percent poor ecological condition. This is reflective of overlaps within the two reaches. Care was taken to ensure that the segmentation of the SCCD data did not misrepresent actual conditions. Based on the City of Spokane field work from 2006, this appears to be a good representation of the shoreline conditions using the data available.

An overview of what the PFC and ecological ratings represent is described below. A more detailed description is provided in Appendix B.

- **Properly Functioning Condition (PFC)** represents the physical ability of a reach to withstand a 25-30 year hydrological event. Properly functioning reaches have characteristics such as well established riparian vegetation, an active floodplain, and stable channels. Sites considered to be properly functioning may not provide other important ecological or biological values and functions.
- **Ecological condition** ratings reflect the current structural diversity, density, and continuity of native plant communities. Riparian vegetative communities trap sediments and nutrients from surface runoff and provide a matrix of root systems that serve as effective filters, minimize streambank erosion and flooding damage, assist streamflow maintenance, and moderate temperatures.

The Ecological Function Assessment described for each of the inventory reaches in this document describes the eight processes and functions identified in the SMA as summarized in Section 3.2. Some of these processes and functions are similar to those used in the SCCD PFC study ratings. Summary information from the PFC study was used in this inventory assessment.

4.4 Spokane River: Reach SR-1

Reach SR-1 is located between the eastern City limits (RM 81.2) and Upriver Dam (RM 80.2). This area is the Upriver Dam operating pool. This reach covers 110 acres including the river, with 57 acres located between the Ordinary High Water Mark (OHWM) and the 200-foot buffer.

4.4.1 Inventory – SR-1

Built Environment

Land Use/Zoning

Tables 4-2 and 4-3 show the land use and zoning designations within this reach.

TABLE 4-2: Land Use SR-1

Land Use	Area (acres) ¹	Percent of Total
Conservation Open Space	9.8	8.8
Light Industrial (LI)	55.9	50.4
R 4-10	45.1	40

1. Area includes river.

TABLE 4-3: Zoning SR-1

Zoning	Area (acres)	Percent of Total
Light Industrial Zone	58.5	56.4
Single-family Residence Zone	45.3	43

The north bank contains two single-family residences and Shields Park (Minnehaha). Adjacent to the City, but located within the County jurisdiction is Camp Sekani and Boulder Beach. Felts Field, zoned light industrial (LI), located on the south bank is a general aviation airport managed by the Spokane Airport Board.

Built Structures/Impervious Surfaces/Development Intensity

Upriver Dam and its associated facilities including the Electric Well are the major built structures in this reach. Two residences are located on the north bank. The area within the shoreline at Felts Field is mowed field. Impervious surfaces account for 1.7 percent of the total area of the reach. The impervious surface is predominately Upriver Drive, the Centennial Trail, and paved parking for Shields Park. A private boat launch, located within the airfield, is used by the airport, residents along the river, and for invited recreational use. This section of the river is used as a runway for seaplanes, and the shoreline used for parking.

Development intensity is currently low. Development on the north bank is limited to the upland side of Upriver Drive. Land may be available within Felts Field for potential development. The majority of stormwater in this area discharges either to the ground or the river.

Transportation

Transportation facilities within the 200-foot buffer include Upriver Drive and the Centennial Trail. Felts Field airport is located within this reach, which includes a gravel perimeter road.

Utilities

Utilities within this reach include overhead power lines on both sides of the river.

Shoreline Modifications

Bank armoring is present along 0.1 mile (3.5 percent) of the shoreline. The USGS Surficial Geology study identified 2.7 acres of artificial fill within this reach. The bank armoring and fill is associated with the Upriver Dam complex.

Environmental

Contaminated sediments (PCBs) have been identified within the river behind Upriver Dam. The Department of Ecology has initiated cleanup that includes capping the contaminated sediments. Portions of this reach just above the dam are listed as impaired for Dissolved Oxygen (DO) according to the State 303(d) listing.

Shoreline Access and Use

Access from the north bank is possible along the entire reach via the Centennial Trail. Many informal trails to water's edge are present. Four acres (3.4 percent) of parkland are located within the reach. Private access includes one boat launch on the south bank near Upriver Dam. Informal trails along the entire south bank are present, although Felts Field hinders access to these trails. Viewpoints along this reach are not obstructed, and due to the presence of Upriver Drive, the Centennial Trail, and Felts Field, it is unlikely that they will be in the future. Recreational use along this reach is high due to the Centennial Trail. There appears to be adequate shoreline area and facilities to meet current needs. There is little opportunity to expand public areas within this reach due to the majority of it being already in public ownership.

Archaeological/Historic Resources

No sites on either the local or state registers or the National Register of Historic Places (NRHP) are contained within the shoreline buffer in this reach. Archaeological sites were identified when work was conducted for the Centennial Trail. Information may be obtained through the Spokane City-County Historic Preservation Office. In general, along the entire Spokane River there is a possibility of uncovering archeological resources.

Natural Environment

Soils

Soils are predominately Garrison gravelly loam that are free draining and are rated as a slight erosion hazard by the Natural Resource Conservation Service (NRCS).

Degraded Areas/Eroding Shorelines

No designated degraded or eroding shorelines were documented in this reach. During field work, it was noted that informal access trails have degraded the banks and steep banks due to erosion, particularly on the south side of the river.

Vegetation

Within this reach, riparian vegetation covers 4.7 acres (4.0 percent), upland vegetation covers 7.7 acres (6.6 percent), and 1.5 acres is noted as having human impacts including constructed banks and areas where foot traffic prevents colonization by plants. Although there are areas of intact riparian communities, they are discontinuous and subject to recreational users including those using the Centennial Trail. Established riparian communities are often narrow and maintain a relatively diverse age class and composition. The two sample sites within this reach exhibited significant coverage of native Ponderosa pine, Pacific willow, and mallow ninebark. Significant non-native species include Siberian elm, Timothy grass, and Japanese knotweed. Based on the representative sample sites, native species account for only six percent of the vegetative cover.

Priority Habitats/Wildlife Corridors

Ninety-eight percent of this reach is designated as Urban Natural Open Space by the Washington Department of Fish and Wildlife (WDFW). Trout and other game fish have been noted in past surveys, as well as deer and other mammals. The WDFW reports that moose are commonly seen in this area, due to relatively good vegetation and lack of development. Red-tail hawk nests and osprey have been reported, as have high concentrations of wintering waterfowl and winter use by bald eagles. The WDFW reports that this reach is very important for winter habitat for the common merganser. This reach provides significant open space that is potentially used as a migration corridor to habitats upstream and downstream.

Critical Areas

Table 4-4 summarizes the critical area inventory for this reach.

TABLE 4-4: Critical Area Inventory SR-1

Critical Area	Description
Wetlands (1)	None existing
Aquifer Recharge	Designated as an aquifer recharge area
Fish and Wildlife Conservation (2)	Riparian habitat areas (RHA) extend to the outer edge of the 100-year flood plain, the CMZ or 250 feet past the OHWM, whichever is greater.
Geologically Hazardous	0.8 acres (0.7 percent) has slopes greater than 30 percent
Frequently Flooded (3)	13 acres (consists of narrow strips of land close to the Upriver Dam Complex)

1. Wetlands based on EWU Wetland Survey.

2. City Municipal Code 11.19.2560

3. 100-year flood plain from FEMA maps.

4.4.2 Ecological Function Characterization – SR-1

Hydrologic

The channel is comprised of a single deep pool impounded by Upriver Dam. The channel is both vertically and laterally stable due to the prevalence of boulders and bedrock substrate, and stable valley form. Because of the low water velocities, the natural banks are generally adequate for energy dissipation, but some localized areas of erosion were noted during the inventory field work. The hydrologic regime is controlled upriver by Post Falls Dam, while locally, water levels are controlled by operations at Upriver Dam. Normal pool elevation is maintained at an elevation of 1,910-feet above Mean Sea Level (MSL) with moderate variation.

Shoreline Vegetation

Although there are areas of intact riparian communities, they are somewhat discontinuous and subject to recreational users of the Centennial Trail and Boulder Beach overflow. The entire north bank supports a narrow strip of riparian vegetation, with good coverage of Ponderosa pine. There are a number of large areas of highly invasive Japanese knotweed with some smaller areas of reed canarygrass observed. Some areas, particularly on the south bank do not have enough riparian vegetative cover to adequately protect banks or provide a source of Large Woody Debris (LWD).

Hyporheic

The reach has pervious soils that promote hyporheic interchange. Hyporheic functions provided by the narrow riparian buffers on both banks limit nutrient uptake. The presence of Upriver Drive and the Centennial Trail along most of the north bank, and lack of a flood plain and associated wetlands, narrow the interchange boundary between the river and the uplands.

Habitat

Habitat for fish and wildlife is intact but altered due to the operation of Upriver Dam and the presence of roads and trails adjacent to the riparian area. Upland migration and forage areas are present along the south bank, though it is generally less vegetated. The north bank provides a narrow band of riparian plant communities encroached on by the road and trail. North of Upriver Drive is Beacon Hill which is a remnant Ponderosa pine habitat supportive of diverse wildlife including white tailed deer, hawks, and a number of owl species. Fish habitat is slackwater in nature, providing rearing and migration, but less spawning area than would be present under natural conditions. Cover for fisheries is lacking due to minimal amounts of large woody debris; although submerged boulders provide some cover from predators.

4.4.3 Ecological Function Assessment – SR-1

The 2005 SCCD PFC study rated this reach as properly functioning, and as fair to good for Ecological Function in its entirety. Of the ecosystem-wide processes and functions that are identified in the SMA, the “timing volume and distribution of LWD”, “water quality” and “range of flow variability” pathways may not be functioning adequately.

- Upland habitats outside the shoreline jurisdiction are large and relatively natural on the north bank. Felts Field is located on the south bank providing open space but little habitat. Transportation corridors separate the upland habitat from the riparian area, and riparian plant species density and diversity is low, resulting in reduced riparian habitat.
- Flows are variable, but the pool elevation is stable. Aquifer in-flow buffers water temperature. Along this reach the channel is entrenched and stable.
- Shorelines appear to be relatively natural in form but vegetation density is low. On-water activities include power boating and low volume seaplane activities creating waves that contribute to bank erosion. The steep banks appear relatively stable but areas of localized erosion are present on both banks.
- LWD was not observed in this reach in sufficient amounts to create structured habitats.
- Water quality is impaired with low DO measured behind Upriver Dam. High metal concentrations and PCBs within the sediments have been found.
- The sediment regime is low and does not replenish gravels needed for fish spawning. The deep pool and steep banks do not provide areas for spawning.

4.4.4 Reach Observations – SR - 1

This reach could benefit from restoration measures to improve native species and remove invasive vegetation. This is a potential wildlife corridor connecting Beacon Hill to the river riparian zone. The following observations were made:

- Removal of the large areas of Japanese knotweed on the north bank just upstream of the dam, and on the south bank below Felts Field about halfway up the reach. Other areas of invasive species were observed and should be removed.
- Re-vegetation with native species along much of the reach.
- Maintain public access to the river; this is a heavily used recreation area, particularly used during the summer for swimming and non-motorized boating.
- Consider improving access to the river by adding additional parking and a boat launch. Coordinate with Spokane County and the Boulder Beach area.
- Maintenance of the Upriver Dam and Felts Field facilities will be needed periodically, and access for maintenance should be incorporated into the City's SMP.
- The City of Spokane Valley and Spokane County both have shoreline jurisdiction adjacent to this reach. Shoreline designations proposed by the City should be coordinated with other appropriate jurisdictions.

4.6 Spokane River Reach: SR-2

This reach is located from Upriver Dam (RM 80.2) to the Mission Avenue Bridge (RM 76.6). This reach covers 262 acres, including the river and adjacent county land, with 163 acres between the OHWM and the 200-foot buffer. Significant features along this reach include the City Waterworks, Spokane Community College, and the Avista Corporate offices.

4.6.1 Inventory – SR-2

Built Environment

Land Use/Zoning

Tables 4-5 and 4-6 show the land use and zoning designations within this reach.

TABLE 4-5: Land Use SR-2

Land Use	Area	Percent of Total
Conservation Open Space	141.2	57.4
Institutional	21.5	8.7
Light Industrial	31.9	13.0
R 10-20	3.6	1.5
R 15-30	38.2	15.5
R 4-10	9.5	3.9

TABLE 4-6: Zoning SR-2

Zoning	Area	Percent of Total
Light Industrial Zone	54.5	23.8
Office Zone	2.1	1.0
Single-family Residence Zone	138.8	60.6
Two-Family Residence Zone	6.5	2.8
Multifamily Residence Zone (R3)	15.5	6.8
Multifamily Residence Design Zone (R3)	2.8	0.5
Limited Multifamily Residence Zone (R3)	8.7	3.8

The majority of the land use, 57 percent, within the shoreline buffer is designated as Conservation Open Space. This includes the Centennial Trail on the north side and the running trail along the south bank between Greene Street and Mission Avenue. Adjacent land use outside of the shoreline buffer is mostly single-family residences.

On the north bank downstream from Upriver Dam within County jurisdiction, multi-family residences are being constructed adjacent to the shorelines. Single-family residences are located between Havana Street and Greene Street. Multi-family residences and apartments are located downstream from Greene Street.

The City Upriver Dam Complex is located along the south bank and includes the City's Well Electric. The area between Upriver Dam and Spokane Community College at Greene Street includes a few industrial facilities, newer local government facilities, and some remaining open space. From Greene Street to Mission Avenue, land use is primarily single- and multi-family residential.

Built Structures/Impervious Surfaces/Development Intensity

Located in the shoreline buffer are 6.5 acres of buildings and 40 acres of impervious surfacing. The impervious surfacing is associated with public roads and trails. There is a river gauging station located just downstream of the Greene Street Bridge on the north bank. Stormwater in this area either drains to bio-infiltration 208-swales, drywells, or directly into the river.

The areas adjacent to the shorelines are generally fully developed and it is not anticipated that significant new development will occur in this area based on land use and zoning designations. The exception to this is the vacant area on the south bank between the Community College and Upriver Dam, which is currently experiencing development.

Transportation

Upriver Drive and the Centennial Trail are located within the shoreline buffer on the north bank. On the south bank, a non-paved running/bike trail is located over the North Valley Sewer Interceptor. South Riverton Avenue is also located within the shoreline buffer. The Greene Street Bridge crosses the river about halfway through this reach. The Mission Avenue Bridge crosses the river at the downriver end of the reach. At both bridge crossings, bridge abutments have armored the bank.

Utilities

The City-owned Upriver Dam separates this reach from Inventory Reach SR-1.

The City's Well Electric is located immediately downstream from Upriver Dam on the south bank. The current Wellhead Protection Area for the City's Well Electric extends just beyond Argonne Road, however, this zone only intersects the river in two locations, one near the well and another to the west of Argonne Road. This reach lies totally within the Aquifer Sensitive Area (a critical area) and has a number of technically defined wellhead capture areas intersecting it, including those originating in north Spokane. The City does not currently have wellhead protection zoning based on the technically delineated capture areas. Regionally, regulation of these zones varies by land use regulator, and this is how the technical definitions have been derived. There are supporting policies and plans to regulate wellhead capture areas in the City.

Water lines cross the river downstream from Upriver Dam and below the Mission Avenue Bridge. The North Valley Sewer Interceptor is located on the south bank. A city sewer is located along Upriver Drive on the north bank. There are five combined Sewer Overflow Outfalls (CSOs) managed by the City and at least 20 stormwater outfalls according to City Utility maps. County plans include a preferred Spokane River and Rebecca Street location for a mixing-zone structure for the proposed County Wastewater Treatment Plant outfall. The County plant would be located on the old Stockyards Property south of the river and Mission Street.

High voltage power lines are located downstream from Upriver Drive on the south bank and cross the river at the extension of Havana Street and also upstream from Mission Avenue.

Natural gas lines are located on the north bank by Mission Avenue and across the river at the Greene Street Bridge.

Shoreline Modifications

Approximately 1.7 acres of artificial fill have been identified by the USGS surficial geology study within this reach. This is associated with the Upriver Dam complex.

Environmental

At Greene Street, PCBs in fish samples have been identified and are listed on the 303(d) list (Category 5) for this Water Resource Inventory Area (WRIA). Zinc and lead concentrations in the river are listed as impaired, with an approved pollution control plan in affect (Category 4B). Immediately below Upriver Dam, DO and temperature are listed as parameters of concern (Category 2) for this WRIA. According to the Ecology database, there are six locations that are either hazardous waste generators, hazardous material handlers, or have underground storage tanks (USTs) located within this reach.

Shoreline Access and Use

The majority of the reach is accessible to the public from the Centennial Trail or along the south bank trails. Informal public access to the river and its banks are abundant, limited only by steep banks. Five formal access points with parking are located along this reach. This reach includes 68 acres of parkland (26 percent). Recreational use along this reach is intensive due to the residential neighborhoods and the Centennial Trail. There is limited access for non-motorized boat launching. The area downstream from Upriver Dam was specifically identified as an area of light use for angling during the February 15, 2007 Spokane River Anglers Forum. There appears to be adequate shoreline area and facilities to meet current needs. There is little opportunity to expand public areas within this reach due to the majority of it being already in public ownership. Views along this reach include buildings and other infrastructure, however, public access and views are not significantly obstructed since transportation corridors are located adjacent to the river banks and buildings are generally low-profile

Archaeological/Historic Resources

No sites on either the local or state registers or the NRHP are contained within the shoreline buffer. Archaeological sites were identified when work was conducted for the Centennial Trail. Archaeological information may be obtained through the City-County of Spokane Historic Preservation Office. In general, there is a possibility of uncovering archeological resources along the entire Spokane River.

Natural Environment

Soils

Soils are predominately Garrison gravelly loam which are free-draining and are rated as a slight erosion hazard by the NRCS.

Degraded Areas/Eroding Shorelines

Several locations of degraded and/or eroding shorelines were identified in this reach. The most prevalent of these were frequent, informal access areas along the south bank which has lead to runnel-type erosion patterns. Steep banks on the south side at the west end of the reach have been cleared of vegetation and are actively eroding. The trail systems located along both banks have resulted in use and degradation of the shorelines.

Vegetation

Within this reach riparian vegetation covers 35 acres (13 percent), upland vegetation covers 44 acres (17 percent), and 3.6 acres is influenced by human impacts including constructed banks and areas where foot traffic prevents colonization by plants.

A large community of non-native golden willows (*Salix alba* var. *vitellina*) is found at RM 76.9-76.8 on the north bank, near the Avista offices and along the Centennial Trail. Other notable plant communities exist between RM 78-79. Here, various species of willows are mixed with black cottonwoods along both banks. Maple (*Acer* spp.) and sumac trees are found scattered along both banks of this reach. Other species present include yarrow, poison oak, Dalmatian toadflax, St. John's wort, spotted knapweed, bugloss, and bachelor's button. Eighteen sample sites were established in this reach. These sample plots showed area coverage of 61 percent native species. Significant non-native species include Siberian elm, reed canarygrass, and black locust.

Priority Habitats/Wildlife Corridors

This reach (93 percent) is designated as Urban Natural Open Space by the WDFW. Trout and other game fish have been noted in past surveys, as well as deer, beaver, and other mammals. Red-tail hawk nests and osprey have been reported, as have high concentrations of wintering waterfowl and winter use by bald eagles. According to the WDFW, the area just below Upriver Dam is an important waterfowl area. Along this reach cottonwood trees and dense shrubs provide good nesting areas for neotropical birds. The riparian area provides open space that is potentially used as a travel corridor to habitats upstream and downstream. Upland areas are impacted by urbanization, but there are a few large open areas remaining, providing potential travel corridors between Beacon Hill and the River.

Critical Areas

Table 4-7 summarizes the critical area inventory for this reach.

TABLE 4-7: Critical Area Inventory SR-2

Critical Area	Description
Wetlands (1)	None existing
Aquifer Recharge	This is an aquifer interchange area. Within this reach the Spokane Aquifer turns to the north. The shoreline within this reach intersects wellhead protection zones for North Spokane wells including Kaiser Mead, Spokane County Water District (SCWD), North Spokane, and City of Spokane's Hoffman Well.
Fish and Wildlife Conservation (2)	Above Greene Street riparian habitat areas (RHA) extend to the outer edge of the 100-year flood plain, the CMZ or 250 feet past the OHWM, whichever is greater. Below Greene Street the RHA extends to the outer edge of the 100 year flood plain or 130 feet past the OHWM.
Geologically Hazardous	21 acres (eight percent) has slopes greater than 30 percent
Frequently Flooded (3)	53 acres (includes gravel bar below Upriver Dam and areas along Upriver Drive between Mission and Greene Streets. Portions of Upriver Driver flood during very high flow events.

1. Wetlands based on EWU Wetland Survey.
2. City Municipal Code 11.19.2560
3. 100-year flood plain from FEMA maps.

4.6.2 Ecological Function Characterization – SR-2

Hydrologic

This reach is free flowing. The aquifer contributes flow upstream, and within this reach, moderate low summer river flows cool the river. The Spokane County Conservation District (SCCD) PFC survey rates this reach as properly functioning.

Shoreline Vegetation

Although the reach is subject to frequent recreational pressure, narrow bands of riparian communities are established. Some areas do not have adequate vegetation along the shoreline, but the lower portion is fairly continuous and has many mature stands of willows and cottonwoods. Established communities exhibit good diversity and vigor, though the riparian buffer width is narrow due to transportation corridors and upland urban use.

Hyporheic

This reach has pervious soils that promote hyporheic interchange. Hyporheic functions are provided by largely intact but narrow riparian buffers. The lack of flood plain and associated wetlands reduce the potential for interchange and nutrient uptake.

Habitat

The reach has been designated as Urban Natural Open Space by the WDFW PHS database through 93 percent of the reach. It provides habitat for elk and white-tailed deer. Upland migration and forage areas are limited but some open areas remain, providing migration corridors for wildlife from the north. Riparian habitat is narrow but well developed. Cover for fisheries is lacking due to low LWD counts, though submerged boulders likely provide cover for fish from predators.

4.6.3 Ecological Function Assessment – SR-2

The 2005 SCCD PFC study rated this reach as fair through 98 percent of its length, with a rating of fair to good at the south channel of the Upriver Dam complex for Ecological Function. Of the ecosystem-wide processes and functions addressed by the SMA, the “timing volume and distribution of LWD”, “water quality” and “range of flow variability” pathways may not be functioning adequately.

- Upland habitats outside the shoreline jurisdiction are urbanized and habitat is moderate. Potential wildlife corridors exist from the Beacon Hill area to the north along the Avista power line right-of-way. Riparian vegetation exists in a narrow band along most of this reach, and plant species diversity is high, containing large areas of mostly natural vegetation.
- Flows are variable due to natural seasonal influences and operation of upstream dams. Water levels change seasonally. Inflow from the aquifer moderates low-flows and decreases water temperature. Along this reach the channel is entrenched and relatively stable.
- Shorelines appear to be relatively natural in form, and riparian vegetation appears healthy. Transportation and utility corridors exist within the shoreline buffer.
- Local LWD recruitment appears to be fair in this reach but was not observed in sufficient amounts to create structured habitats.
- Water quality is impaired with PCBs listed on the 303(d) list. Metal concentrations including zinc and lead are high within the river and likely in the sediments. Urban runoff from CSOs, storm drains and paved areas likely impact water quality during storm events.
- The sediment regime is low and does not replenish gravels for fish spawning.

4.6.4 Reach Observations – SR - 2

This reach would benefit from protective and restoration measures, to preserve and enhance existing function. Many areas along the river would benefit from both riparian and upland re-vegetation. In some of the larger open spaces that remain, opportunities may exist to increase the width of both riparian and upland habitats, providing potential wildlife refuges. Both formal and informal access sites are plentiful.

Vegetation at some informal sites may benefit from closer management and restrictions to control access. The following specific opportunities should be considered.

- Protect existing vegetation along the north shore. Improve and restore disturbed areas. Upstream of Greene Street, a high steep bank limits access, providing an opportunity for protection and restoration. Implement a plan to manage invasive weed growth from Greene Street downstream.
- Opportunity to augment existing habitat by planting cottonwoods, particularly on the south bank.
- Improve vegetation on gravel bar across from Upriver Dam. Opportunity to provide a refuge area and/or natural park setting.
- Protect views from the river to shore by minimizing tree removal in residential developments.
- Provide for maintenance of utilities and outfalls when developing the SMP.
- Recognize the presence of well capture zones within this reach when developing the SMP and coordinate goals, policies, and regulations with the Wellhead Protection Act.
- Maintenance of existing outfalls will be needed periodically, and should be incorporated into the City's SMP. Consider signing for all outfalls visible from the river and the banks.
- Consider improving direct river access for non-motorized watercraft along this reach.

4.7 Spokane River: Reach SR-3

This reach is located between Mission Avenue Bridge (RM 76.6) to Hamilton Bridge (RM 75.7) and covers 80 acres including the river, with 36 acres between the OHWM and the 200-foot buffer.

4.7.1 Inventory – SR-3

Built Environment

Land Use/Zoning

Tables 4-8 and 4-9 summarize the land use and zoning designations within this reach.

TABLE 4-8: Land Use SR-3

Land Use	Area	Percent of Total
Commercial	14.6	18.1
Conservation Open Space	31.7	39.4
Heavy Industrial	10.8	13.5
Light Industrial	13.8	17.2
R 15-30	9.5	11.8

TABLE 4-9: Zoning SR-3

Zoning	Area	Percent of Total
General Commercial Zone	14.6	18.1
Heavy Industrial Zone	10.8	13.5
Light Industrial Zone	15.7	19.6
Two-Family Residence Design Zone	6.9	8.5
Multifamily Residence Zone (R3)	17.3	21.6
Multifamily Residence Design Zone (R4)	15.1	18.7

Open space and residential uses are found in the northern portion of the reach. The open space is associated with Mission Park and the Centennial Trail. Residential areas are found on both sides of the river. Industrial and commercial uses are found in the southern portion of the reach. This reach is the transition from mainly residential and open space land upstream from the Mission Avenue Bridge to the industrial and commercial land uses found downstream from Hamilton Street Bridge.

Built Structures/Impervious Surfaces/Development Intensity

This reach is developed but is undergoing re-development. Many of the re-development projects are converting past industrial uses to commercial and residential uses. Impervious surfaces cover 21 percent of the reach and include roads, parking lots/driveways, and buildings. Approximately five percent of the

reach area is covered with buildings ranging from single-family residences to large commercial complexes. It is anticipated that impervious surfaces will increase within this reach.

Transportation

This reach begins and ends at the Mission and Hamilton Street bridges. The Trent Avenue Bridge also crosses the river within this reach. An old railroad trestle often referred to as the “Iron Bridge” crosses approximately halfway through the reach (may be restored as a pedestrian bridge), and the Burlington Northern Santa Fe Railroad bridge crosses just upstream from the Iron Bridge. The Centennial Trail is located on the west bank, and South Riverton Avenue is located on the east bank in the upstream portion of the reach.

Utilities

The North Valley Sewer Interceptor is located on the south bank. Sewers cross the river at two locations.

Two CSO outfalls are located in the reach. Eight stormwater outfalls are located in the reach according to City Utility Maps.

High voltage power lines cross the river downstream of Mission Avenue and upstream of Trent Avenue.

Shoreline Modifications

There is a quarter-mile of bank armoring along the west shore in the northern portion of the reach alongside Mission Park. The USGS surficial geology data indicates that there are 3.8 acres of fill associated with bank armoring.

Environmental

This reach is listed as impaired for total PCBs and zinc according the Ecology 303(d) listing. The Department of Ecology database lists five sites of interest within this reach. There are two hazardous waste generators, two underground storage tank (UST) sites, and one leaking underground storage tank (LUST) site. Site remediation was recently completed under the Hamilton Street Bridge area on the south bank.

Shoreline Access and Use

Access in this reach is limited. Mission Park and the Centennial Trail provide access to the river at the north end, though not to the river’s edge. Access on the east bank is possible along the northern portion of the reach. Parkland covers 4.3 acres (five percent) of the reach. Access on either side of the river along the southern portion is limited by private property and commercial and industrial land use. Use in this area is considered light with opportunities to expand as private development occurs.

Archaeological/Historic Resources

No sites on either the local or state registers or the NRHP are contained within the shoreline jurisdiction. Archaeological sites were identified within this reach. Cultural resource and archaeological information may be obtained through the Spokane City-County Historic Preservation Office.

Natural Environment

Soils

Approximately half the reach has free-draining Garrison gravely loams with the other half being noted as riverwash. The riverwash soils are clayey, do not drain well, and have a high runoff potential according to NRCS soil surveys.

Degraded Areas/Eroding Shorelines

No designated degraded or eroding shorelines were documented in this reach. However, informal access trails exist contributing to erosion of the banks.

Vegetation

Within this reach, riparian vegetation covers 6.2 acres (eight percent) and upland vegetation covers five acres (six percent). The reach is urbanized and has a narrow but continuous band of tree and shrub communities. There are significant amounts of non-native ornamental species found. Eight sample sites were established in this reach. The sample plots showed an area coverage of 68 percent native species. Significant non-native species include Siberian elm, golden willow, reed canarygrass, and black locust. Shrub communities distributed throughout the reach include common chokecherry, black hawthorn, and various willow species. Douglas maple and sumac trees are found scattered along both banks of the reach. Douglas fir and Ponderosa pine, as well as groupings of black cottonwood and locust are noted on the upland areas. Herbaceous species include Dalmatian toadflax, St. John's wort, spotted knapweed, blackberry, and bachelor's button.

Priority Habitats/Wildlife Corridors

The majority of the reach (93 percent) is designated as Urban Natural Open space by the WDFW. Trout and other game fish have been noted in past surveys, as well as beaver, deer, and other mammals, and within the reach a Wildlife Heritage Site was designated by the WDFW for merlin (*Falco columbarius*). According to the WDFW, this reach provides a good nesting area for neotropical birds. This area also provides winter habitat for waterfowl, and bats appear to use all the bridges in the area to roost. This reach provides a narrow wildlife corridor adjacent to roadways, railroads, and the adjacent industrial areas.

Critical Areas

Table 4-10 summarizes the critical area inventory for this reach.

TABLE 4-10: Critical Area Inventory SR-3

Critical Area	Description
Wetlands (1)	None existing
Aquifer Recharge	This is an aquifer interchange area.
Fish and Wildlife Conservation (2)	The riparian habitat area (RHA) extends to the outer edge of the 100-year floodplain or 130-feet past the OHWM.
Geologically Hazardous	0.2 acres (0.3 percent) have slopes greater than 30 percent.
Frequently Flooded (3)	9.3 acres have been identified as within the 100 year floodplain including areas on the east bank by the railroad bridges and a large area on the west bank just upstream of Hamilton Street. Both areas are generally separated from the river, and are not considered as part of the shoreline jurisdiction.

1. Wetlands based on EWU Wetland Survey.

2. City Municipal Code 11.19.2560

3. 100-year flood plain from FEMA maps.

4.7.2 Ecological Function Characterization – SR-3

Hydrologic

The stream flow in this reach is characterized by the backwater pool of the Upper Falls Dam. The channel is both vertically and laterally stable due to the presence of bedrock substrate and riprapped banks. Boulder and rock outcroppings comprise the substrate and banks are adequate to dissipate energy and protect banks. The SCCD PFC survey rates this reach as properly functioning.

Shoreline Vegetation

The reach is urbanized and has a narrow but continuous band of tree and shrub communities. There is a significant amount of non-native ornamental species found in this reach. An area of Japanese knotweed was found on the west bank just below the Iron Bridge.

Hyporheic

Hyporheic functions are provided by narrow riparian buffers on both banks that limit nutrient uptake. The northern portion of the reach has pervious soils, which promote hyporheic interchange; however, soils in the lower portion are less pervious, potentially limiting interchange.

Habitat

Habitat for fish and wildlife is generally intact within the riparian area. The upland area is highly urbanized, restricting forage and movement of wildlife. Riparian habitat has been altered by the operation of the Upper Falls Dam downstream. The water level does not fluctuate much due to the dam's

backwater. Cover is lacking due to low LWD counts, though submerged boulders likely provide cover from predators.

4.7.3 Ecological Function Assessment – SR-3

The 2005 SCCD PFC study rated this reach as properly functioning, and in fair Ecological Function for 93 percent of its length. Of the ecosystem-wide processes and functions addressed by the SMA, the “timing volume and distribution of LWD”, “water quality” and “range of flow variability” pathways may not be functioning adequately.

- Upland habitats outside the shoreline jurisdiction are urbanized and habitat is poor. Riparian vegetation exists in a narrow band along most of this reach and plant species diversity is relatively high, containing large areas of native vegetation.
- Flows are variable due to operation of upstream dams, but water levels do not fluctuate in this area due to the backwater effect of Upper Falls Dam. Inflow from the aquifer moderates low flows and decreases water temperature. Along this reach the channel is stabilized by the natural bedrock, artificial fill, and riprap.
- Alterations to the shorelines have occurred in this area including artificial fill, riprap, and planting of non-native plant species. This reach is urbanized and includes past industrial uses that have resulted in degradation of the shorelines and adjacent upland areas.
- Large Woody debris (LWD) was not observed in this reach in sufficient amounts to create structured habitats.
- Water quality is impaired with PCBs and zinc listed on the 303(d) list. Urban runoff from CSOs, storm drains and paved areas likely impact water quality during storm events. River banks and adjacent upland areas are potentially contaminated from past industrial uses.
- The sediment regime is low and does not replenish gravels for fish spawning. Due to backwater affects, this reach is slow moving without developed riffles.

4.7.4 Reach Observations – SR - 3

This reach would benefit from protective and restoration measures, to preserve and enhance existing function. Upland habitat is limited due to past industrial uses and increasing urbanization. The following opportunities should be considered.

- Removal of Japanese knotweed on west bank of river downriver from the Iron Bridge. Replant area in native species.
- Consider replacing non-native vegetation with native species on east bank upstream of Trent Bridge.
- An un-vegetated area, located immediately upstream of the Iron Bridge on the west bank, could be re-vegetated to improve function.
- Downstream of Hamilton Bridge, the south bank is armored with riprap. A recent clean-up site is located at the top of the bank along much of this area. Consider re-vegetating with native species to improve shoreline function.
- Continued cleanup of contaminated areas (Brownsfield) on adjacent upland areas.
- Opportunities exist to expand public access and use.

4.8 Spokane River: Reach SR-4

Reach SR-4 is located between the Hamilton Street Bridge (RM 75.7) and the Monroe Street (RM 73.4) Bridge. The river splits at Havermale and Canada Islands at the Upper Falls and rejoins upstream of Spokane Falls. This reach is in the City of Spokane's downtown core and includes Riverfront Park and Spokane Falls. The reach covers 183 acres including the river, with 76 acres between the OHWM and the 200-foot buffer.

4.8.1 Inventory – SR-4

Built Environment

Land Use/Zoning

Tables 4-11 and 4-12 show the land use and zoning designations within this reach.

TABLE 4-11: Land Use SR-4

Land Use	Area	Percent of total
Commercial	22.6	12.3
Conservation Open Space	47.2	25.7
Downtown	25.4	13.8
Heavy Industrial	1.8	1.0
Institutional	21.5	11.7
Open Space	59.7	32.6
R 15+	5.3	2.9

TABLE 4-12: Zoning SR-4

Zoning	Area	Percent of total
Community Business Zone	12.0	6.5
Downtown Core	2.5	1.4
West End	0.03	0.0
East End	28.6	15.6
North Bank	87.2	47.6
General Commercial Zone	23.5	12.8
Heavy Industrial Zone	1.8	1.0
Multifamily Residence Zone (R4)	14.4	7.9
Multifamily Residence Design Zone (R4)	13.4	7.3

The majority of land use in this reach is open space and conservation open space, mostly associated with Riverfront Park. Downtown and institutional land uses cover approximately 26 percent of the reach. Institutional uses include the Spokane Public Facilities District properties, including the Opera House and Convention Center, Riverpoint Higher Education Campus, and Gonzaga University. This reach is highly developed and is extensively used by the public.

Built Structures/Impervious Surfaces/Development Intensity

This is the most highly developed reach within the study area. Approximately eight percent of the total area of the reach is building footprint, and impervious surface coverage is 24 percent. These are the largest percentages for non-vegetative cover within the study area. It is anticipated that new development will occur within this reach as redevelopment of existing properties and also as infill of currently open private land as evidenced by the proposed condominium developments and those under construction.

Transportation

Five major transportation arterials cross the river within this reach, including Hamilton, Trent (State Route [SR]-290), Division (SR-395), Washington, and Monroe Streets. There are 1.7 miles of roadways within the reach and 0.14 miles of rail line. Nine pedestrian bridges are located within this reach.

Utilities

This reach has water, sewer, and storm drain pipes and outfalls located through its entire length. The sewer main serving much of the south side of the river crosses the Post Street Bridge.

There are at least 16 public and private storm water outfalls within this reach noted on the City Utility Maps. The Avista owned Upper Falls and Monroe Street Hydroelectric developments and associated power distribution facilities are located in this reach. Both underground and overhead high voltage power lines cross the river and are located along the shoreline at many locations, as are natural gas distribution lines.

Shoreline Modifications

Extensive shoreline modifications are found within this reach. Major modifications include the Upper Falls and Monroe Street dams and associated facilities. Modifications have been made for transportation (bridges), and aesthetics at Riverfront Park in front of the Opera House.

Environmental

This reach is listed in the 303(d) listing for dissolved oxygen. Ecology lists three toxics cleanup sites within the study area. There is one cleanup under Ecology's Voluntary Cleanup Program, one under State regulations, and one conducted independently. There are three other locations of interest to Ecology within this reach: a UST site, a hazardous waste generator, and a facility that uses a reportable quantity of hazardous materials. Portions of the north bank are recognized by Ecology as having residual near-surface contamination related to former railroad and industrial uses.

Shoreline Access and Use

The majority of the reach is accessible and heavily used by the public for recreation and community events. From Riverfront Park, public access and view areas and paved pedestrian trails are located along most of the shore. In-river use within portions of this area upstream of the falls is prohibited by City Ordinance. Maintaining views of the river is important because of the aesthetic value of the falls.

Archaeological/Historic Resources

There are three historic register sites within this reach. The Monroe Street Bridge, which was recently renovated, is listed on both the local historic register and National Register of Historic Places. Great Northern Tower, also known locally as the Clock Tower, located on Havermale Island within Riverfront Park is listed on the state historic register. Avista's Post Street substation is a Kirkland Cutter-designed building constructed in 1909. Archaeological sites have been identified in this reach. Cultural resource and archaeological information may be obtained from the Spokane City-County Historic Preservation Office.

Natural Environment

Soils

The dominant geological feature in this reach is the Columbia River basalts forming the Spokane Falls. Significant portions of the area have exposed basalt. The dominant soils within the reach are riverwash and Hesseltine very rocky complex. The dominant soils have a high runoff potential and are rated as a slight erosion hazard.

Degraded Areas/Eroding Shorelines

No designated Degraded or Eroding Shorelines were documented in this reach. This is the most urban of all reaches surveyed, and development has impacted the function of both banks to varying degrees. A concrete wash-out site on the north bank near Cavanaugh's River Inn prevents proper riparian function from becoming established while several areas of riprap revetment and otherwise modified stream bank were also noted. The bank near the Convention Center was also noted as eroded during the field survey.

Vegetation

Within this reach, riparian vegetation covers 5.3 acres (three percent) and upland vegetation covers 7.3 acres (four percent). The reach is urbanized and has a very narrow but continuous band of tree and shrub communities. There are areas of non-native ornamental species found. Six sample sites were established in this reach. These sample plots showed area coverage of 80 percent native species, though two plots near Division Street showed less than 10 percent native cover. The sample sites showed significant coverage of native black cottonwood, Pacific willow, box elder, and golden currant.

Priority Habitats/Wildlife Corridors

This reach (99 percent) is designated as Urban Natural Open space by the WDFW. Trout and other game fish have been noted in past surveys, as well as deer and other mammals. Within the reach, a Wildlife Heritage Site was designated by the WDFW for peregrine falcons. The native and non-native vegetation supports many resident and neotropical birds. Many non-native starlings and English house sparrows also exist in the area as well as urbanized geese and ducks. Bats appear to roost on all the bridges according to the WDFW. This reach provides a mix of habitats, with very narrow bands of wildlife corridor between roadways and commercial areas. The river shore may be an important corridor for wildlife movement due to the urbanized upland habitats. The Falls and park area are not likely important habitat areas for fish or wildlife due to the extreme hydraulics and adjacent urbanization.

Critical Areas

Table 4-13 summarizes the critical area inventory for this reach.

TABLE 4-13: Critical Area Inventory SR-4

Critical Area	Description
Wetlands (1)	None existing
Aquifer Recharge	This is designated as an aquifer interchange area, however aquifer recharge is likely limited by the basalt bedrock
Fish and Wildlife Conservation (2)	The riparian habitat area (RHA) extends to the outer edge of the 100-year floodplain or 130-feet past the OHWM.
Geologically Hazardous	12 acres (6.6 percent) have slopes greater than 30 percent, 0.2 acres (0.1 percent) are rated for slopes and erosive soils.
Frequently Flooded (3)	Four acres have been identified as within the 100-year floodplain including a large area on the north bank downstream of Hamilton Street and Arthur Lake at Gonzaga University.

1. Wetlands based on EWU Wetland Survey.

2. City Municipal Code 11.19.2560

3. 100-year flood plain from FEMA maps.

4.8.2 Ecological Function Characterization – SR-4

Hydrologic

The stream flow in this reach is pool-like in nature for most of its length above the Upper and Lower Falls dams, while between the dams and through the Riverfront Park area, the river is highly dynamic, flowing through bedrock cataracts and falls. The channel is both vertically and laterally stable due to the prevalence of boulders and bedrock substrate. The banks are primarily bedrock in the lower sections and boulder and bedrock in the upper sections, both very stable and resistant to erosion. At lower flows, the hydrologic regime is controlled mostly by dams upriver, particularly by Post Falls Dam. At higher flows, the regime is controlled by the natural restriction at the outlet of Lake Coeur d'Alene. Flow in the north channel of Havermale Island is controlled by the Upper Falls Dam. The south channel of Havermale Island functions as the fore-bay for the dam. Groundwater inflow also affects river flows and temperatures in this reach.

Shoreline Vegetation

The reach is heavily urbanized and has a very narrow but somewhat continuous band of mostly native vegetation. There are areas where ornamental non-native vegetation has been planted. Vegetation has been planted within Riverfront Park and along most of the developed banks providing habitat for wildlife and birds.

Hyporheic

Hyporheic functions are not considered significant in this reach due to the prevalence of bedrock and the encroachment of roadways and structures.

Habitat

This reach has been designated as Urban Natural Open Space by the WDFW. Habitat for fish and wildlife is altered due to the operation of the dams and the presence of roads, structures, and utilities within the riparian area. This reach provides little natural habitat downstream of Division Street, but some riparian buffer area and ponded in-stream habitat is present upstream. However, wildlife is present in this area including beaver and birds. Downstream of Division Street, the stream banks are less well-vegetated.

4.8.3 Ecological Function Assessment – SR-4

The 2005 SCCD PFC study rated this reach as properly functioning, and in poor or fair Ecological Function for 93 percent of its length. Of the ecosystem-wide processes and functions that are the focus of the SMA, most of the eight pathways are not functioning adequately. LWD was not observed in this reach in sufficient amounts to create structured habitats. Flow variability is controlled by the operation of the dams in the system, both upstream and downstream. Sediment regime, like much of the rest of the river, is limited by lack of sediment in the entire system downstream of Coeur D’Alene Lake. Riparian plant species diversity is good, but lacks many essential native elements and also lacks the amount of area coverage to provide normal functions.

4.8.4 Reach Observations – SR - 4

Potential re-vegetation sites were noted within this reach and maintaining and improving existing habitat through development regulations is important.

Maintenance of the community’s infrastructure is important within this reach. Power generation, maintenance of the dams, utility and transportation crossings all require maintenance. The SMP should consider provisions to allow for maintenance while protecting and potentially enhancing the natural environment.

Development of SMP goals and policies should recognize existing facility and redevelopment plans including Gonzaga University and the University District.

- Condominium development is under construction and proposed in some of the remaining privately-owned open spaces and as redevelopment of existing buildings. Maintaining public access and viewpoints to the Spokane Falls should be a priority feature of the City SMP.
- A recent toxic clean-up site under the Hamilton Street Bridge on the south bank is armored with riprap and dominated by non-native vegetation. It is a candidate for riparian re-vegetation and bank naturalization.

- Farther upstream near Trent Avenue, the south bank is maintained in a park-like setting. Increasing natural vegetation density could improve shoreline function and habitat.
- An area on the Gonzaga University campus between Trent Avenue and Arthur Lake on the north bank provides some riparian function. It could be improved and restored to a more natural state.
- Arthur Lake, once part of the Spokane River, could be reconnected and rehabilitated for fish and wildlife habitat.
- Concrete from an old concrete washout site is present on the north bank near the River Inn. The concrete could be removed to restore the bank to a more natural condition.

4.9 Spokane River: Reach SR-5

Reach SR-5 is located between the Monroe Street Bridge (RM 73.4) and the confluence with Latah Creek (RM 72.2). This reach covers 142 acres including the river with 80 acres between the OHWM and the 200-foot buffer. This reach includes portions of the Peaceful Valley Neighborhood. The West Central Neighborhood and the Summit property (Kendall Yards) are located on the north bluff above the river, and Browne's Addition is located on the south bluff. A Great Gorge Master Plan has been developed by Friends of the Falls for this reach. This Master Plan has not been formally adopted by the City.

4.9.1 Inventory – SR-5

Built Environment

Land Use/Zoning

Tables 4-14 and 4-15 show the land use and zoning designations within this reach taken from City GIS layers.

TABLE 4-14: Land Use SR-5

Land Use	Area	Percent of total
Commercial	1.5	1.1
Conservation Open Space	119.8	84.0
Downtown	3.6	2.5
Institutional	2.8	2.0
R 15+	2.8	2.0
R 15-30	1.9	1.3
R 4-10	10.2	7.1

TABLE 4-15: Zoning SR-5

Zoning	Area	Percent of total
Community Business Zone	19.1	13.4
West End	7.7	5.4
Single-family Residence Zone	86.7	60.8
Two-Family Residence Zone	24.1	16.9
Multifamily Residence Zone (R3)	1.9	1.3
Multifamily Residence Zone (R4)	2.7	1.9
Limited Multifamily Residence (R8)	0.4	0.3

The City has been working to acquire properties along the river as they become available. As a result, the majority of land use within this reach is designated as conservation open space (84 percent). Adjacent land use in Peaceful Valley on the south bank is general residential. A small area of single-family residential housing is located on the north bank about mid-reach. The Summit property on the north bluff has been recently cleaned up using a Brownsfield grant and state revolving-loan funds. Mixed-use development is proposed for this area.

Built Structures/Impervious Surfaces/Development Intensity

A small residential area of approximately 15 houses is located on the north bank about mid-reach. Development on the north bluff is planned starting in 2007 as the mixed-use Kendall Yards Development. This area is located on vacant property once used as a rail yard. Development within the reach is mostly associated with single-family residences located in the Peaceful Valley Neighborhood. The Peaceful Valley Neighborhood on the south bank has been single-family residential since early in the City's history. In recent years, the area has been undergoing moderate development pressure. It is anticipated that development pressure will increase due to its proximity to downtown Spokane. Within the shoreline jurisdiction, there is currently 17 percent impervious surface. About one percent of the reach is occupied by building footprints. Most of the impervious surface is located on the south bank.

Viewpoints from the shore and adjacent bluffs to the river do not appear to be obstructed. Viewpoints from the river/bank show urban development but are relatively natural due to the riparian vegetation, moderate building densities and public space, and parklands are located along the river and the bluffs.

Transportation

There are three bridges within this reach, the Monroe and Maple Street Bridges and the Sandifur pedestrian bridge. There are approximately 1.4 miles of roadways within the reach, most on the south side of the river, including Clarke Avenue that parallels the river.

Utilities

City sanitary sewers are located along the south shore and at the top of the north bluff. The sanitary sewers provide service to the west side of the City and to the West Plains area. Seven CSO discharges are located in this reach according to the City Utility Maps. The Clark Avenue sewage lift station is located on the south bank. A pressure sewer line is located under the river and connects to a sewer main near the north shore. Ten localized storm drain outfalls are also located in this reach according to the City Utility Maps.

The Avista-owned Lower Falls Powerhouse is located on the south bank downstream from Spokane Falls. Power lines cross the river at three locations.

Shoreline Modifications

There is approximately a quarter-mile of bank armoring within this reach. A concrete wall extends from just under the Monroe Street Bridge, near the Avista powerhouse, to midway through Glover Field Park on the south bank. Much of the north bank was filled to provide support for the railroad grade in the early 1900s. Approximately three acres of artificial fill/rock is located below the Monroe Street Bridge.

Environmental

Zinc and lead concentrations in the river are listed as impaired with an approved pollution control plan in affect (Category 4B). There are no 303(d) list impairments. According to data from the Department of Ecology, there are two hazardous waste generators and seven facilities that handle reportable quantities of hazardous materials in this reach.

Shoreline Access and Use

Approximately 30 percent of the area within the reach is park-land and informal access is very abundant on the south bank. Peoples Park provides good public access along the shores near the confluence with Latah Creek. Access to the south bank has increased since construction of the Sandifur Bridge and the north segment of the Centennial Trail. Avista's Huntington Park, located downtown at the Monroe Street Powerhouse, provides public viewing access to Spokane Falls. Informal river access points for boaters to carry their watercraft to the river are located at the west end of Water Street in Peaceful Valley and at the Sandifur Bridge. There are plans to develop both accesses in the Great Gorge Master Plan. This area is heavily used by anglers as identified at the February 15, 2007 Spokane River Anglers Forum. Much of the north bank is less accessible due to steep banks, though anglers are reported to fish along much of this reach. Recent studies for Avista and WRIA indicate that this reach is an important spawning area for the Lower Spokane fisheries. Opportunities to improve access exist in this area that is close to the City Center, Browne's Addition, and the West Central Neighborhood. It is anticipated that increased use will occur in the future.

Archaeological/Historic Resources

Eight percent of the reach is designated as a Historic District including the Peaceful Valley Neighborhood and parts of Riverside Avenue. There are two sites listed on the local historic register and fourteen listed on the National Register of Historic Places. Most of the listings are residences with the exception of the Peaceful Valley Community Center and the Spokane Casket Company (no longer existing). Archaeological sites have been identified in this reach. Cultural resource and archaeological information may be obtained from the Spokane City-County Historic Preservation Office.

Natural Environment

This reach includes a number of well-vegetated gravel bars forming islands located upstream from the confluence of Latah Creek. The vegetated gravel bars provide protected habitat for vegetation and wildlife.

Soils

Columbia River basalts are found at the east end of this reach but the dominant lithology within the reach is unconsolidated sediments associated with the Missoula Floods. Soils within the reach are mixed but approximately half are Springdale gravelly loamy sand located on the steep north bank. These soils have a high-infiltration rate, low runoff potential and are rated as a severe erosion hazard. The remainders of the soils are rated as a slight erosion hazard.

Degraded Areas/Eroding Shorelines

No designated degraded or eroding shorelines were documented in this reach; however, the reach has the largest number of documented Critical Area geological hazards. The entire north bank of the river is delineated as an erodible soil area from the Maple Street Bridge to the Sandifur pedestrian bridge, while several other portions are mapped as "steep-slope and steep-slope/erodible soil". The soils at the south end of the Monroe Street Bridge are almost entirely fill material.

Vegetation

Within this reach riparian vegetation covers 14 acres (10 percent), with upland vegetation covering 41 acres (29 percent). Access to the shoreline in this reach is hindered by private property and steep slopes, therefore sample plots were not established. Information contained in the Great Gorge Master Plan prepared for the Friends of the Falls was reviewed and is briefly summarized here. This reach exhibits good natural variation of plant species. Greater diversity is found throughout the middle and lower portions of the reach. Ponderosa pine communities encroach down to the water's edge in many portions of the lower reach. Black cottonwood and willow communities are well established along much of the reach. Other herbaceous species present include poison oak, Oregon grape, balsamroot, common tansy, and spotted knapweed.

Priority Habitats/Wildlife Corridors

This reach (100 percent) is designated as Urban Natural Open space by the WDFW. Trout and other game fish have been noted in past surveys, as well as deer, mink, and other mammals. While no areas are designated as Wildlife Heritage Site within the reach, osprey, merlin, and other raptor species are known to forage and nest in the area. Wildlife diversity increases in this area from Monroe Street to the confluence with Latah Creek, with the confluence area being very rich and productive according to the WDFW. Many raptors, passerine birds, and bats breed, forage, and roost in this area. Upland wildlife corridors are limited due to increasing urbanization to the east. The riparian corridor is relatively intact from the Latah Creek confluence to the Spokane Falls.

Critical Areas

Table 4-16 summarizes the critical area inventory for this reach.

TABLE 4-16: Critical Area Inventory SR-5

Critical Area	Description
Wetlands (1)	None identified
Aquifer Recharge	Spokane/Rathdrum Prairie Aquifer Boundary – Spokane Aquifer Sensitive Area
Fish and Wildlife Conservation (2)	The riparian habitat area (RHA) extends to the outer edge of the 100-year floodplain or 130-feet past the OHWM.
Geologically Hazardous	0.2 acres (0.3 percent) have slopes greater than 30 percent
Frequently Flooded (3)	12 acres have been identified as within the 100-year floodplain most located within Peaceful Valley and at the confluence with Latah Creek.

1. Wetlands based on EWU Wetland Survey.
2. City Municipal Code 11.19.2560
3. 100-year flood plain from FEMA maps.

4.9.2 Ecological Function Characterization – SR-5

Hydrologic

The stream flow in this reach is riffle-pool in nature, with weakly developed pools and moderate sinuosity. The river flows through the upper portion of the Great Gorge with deep valley walls of bedrock and erodible soils. The channel is both vertically and laterally stable due to the prevalence of boulders and bedrock substrate, and stable valley form. Gravel bars forming islands have developed in the river channel. Though the river shows some meander formation, it is likely due to historic, valley-forming floods, and not from periodic channel-forming processes (such as 10-, 20-, or even 500-year floods). Boulders and cobbles are found throughout the reach with occasional bedrock outcropping. The hydrologic regime is controlled by dam operations upriver.

Shoreline Vegetation

Shoreline vegetation is diverse and well established through much of this reach providing habitat and shading of the river.

Hyporheic

Hyporheic functions are functioning normally in this reach. A few residences in the Peaceful Valley Neighborhood are encroaching on the riverbanks, which may impede local function.

Habitat

Habitat for fish and wildlife appears to be functioning at excellent levels within this reach. This reach is known to be one of the major spawning areas along the lower Spokane River. Urbanization in the upland areas limits wildlife habitat and the movement of wildlife through the area. However, this reach provides connectivity with the Latah Creek watershed to the south. Water level fluctuations and dispersed recreational use of the riverbanks may impede function to a limited extent.

4.9.3 Ecological Function Assessment – SR-5

The 2005 SCCD PFC study rated this reach as properly functioning and in good Ecological Function for 100-percent of its length. Based on our field survey, only two of the eight pathways may not be functioning adequately within this reach.

- Upland habitats outside the shoreline jurisdiction are urbanized and have limited areas available for forage and migration. However, Latah Creek provides a corridor for wildlife movement from the south. Riparian plant species diversity is high and the reach contains large areas of mostly natural vegetation.
- Flows are variable, but flow from the aquifer to the river moderates low flows and decreases water temperature. Along this reach the channel is entrenched and stable and exhibits gravel bars supporting well-established vegetation.
- Shorelines have been significantly altered in the past, but have stabilized and provide habitat and desirable shoreline functions. Almost the entire reach provides a good framework for aquatic and shoreline functions

- Large woody debris (LWD) was not observed in this reach in sufficient amounts to create structured habitats.
- Water quality is generally good within the limits of the Spokane River system, but has high metal concentrations. CSO and storm drain outfalls contribute poor water quality inputs into the river during rain and snowmelt events degrading water quality in the river.
- The sediment regime is low and does not replenish gravels needed for fish spawning. Avista moves gravel that has settled behind the Monroe Street Dam to below the falls every few years.
- Consider supplementing spawning gravels to improve fisheries.

4.9.4 Reach Observations – SR - 5

This reach would benefit from protective measures to preserve existing function. It is anticipated that the Kendall Yards Development, future development within Peaceful Valley, projects contained in the Great Gorge Master Plan, and an increased appreciation for the river will increase human use. The following opportunities for protection and restoration should be considered. These opportunities should be coordinated with the Kendall Yards, Friends of the Falls Great Gorge Master Plan, and the Peaceful Valley Neighborhood plans.

- Control access to the shorelines and river as use increases by providing more formal public access areas, including access for non-motorized drift boat and raft use. (Spokane River Anglers' Forum 2/15).
- Control potential flood damage to areas of Peaceful Valley by diking or purchasing property impacted by flooding.
- Re-vegetate shoreline below the Spokane Athletic Club.
- Consider adding the wooded river terrace on the north bank to the Herbert M. Hamblen Conservation Area.
- Re-vegetate Peoples Park area on both banks, stabilize slopes and remove construction debris on south bank downstream of Sandifur Bridge.
- Provide protection for the north bank with its steep, highly erodible slopes.
- Consider the recommendations and proposed plan of the Great Gorge Master Plan when developing goals and policies for the SMP.
- Increase security, parking, restrooms at Peoples Park (Avista Recreation Facility Inventory comment.)
- Existing access points for non-motorized boaters are gated and locked, a concern expressed at the Spokane River Anglers' Forum (2/15).
- Consider supplemental spawning gravels to improve fisheries.

4.10 Spokane River: Reach SR-6

Reach SR-6 is located between the confluence of Latah Creek (RM 72.2) and the T. J. Meenach Bridge (RM 69.8). This reach covers 220 acres including the river with 120-acres between the OHWM and the 200-foot buffer. Within this reach significant features include the Sans Souci Mobile Home Park on the east bank, Greenwood Memorial Terrace and Riverside Memorial Park Cemeteries, and the River Run residential development on the west bank. The West Central Neighborhood is located on the east side of the river.

This section contains one of the best remaining areas of a south and west-facing naturally vegetated shoreline within the City. It is located between Meenach Bridge and the Sans Souci on the east bank. A portion of this area is public, the remainder is private property. Riverside State Park located downstream also has remaining areas of natural vegetation. The Sisters of the Holy Name property is located on the west bank on an incised meander. This property has been maintained in a relatively natural state.

4.10.1 Inventory – SR-6

Built Environment

Land Use/Zoning

Tables 4-17 and 4-18 show the land use and zoning designations within this reach.

TABLE 4-17: Land Use SR-6

Land Use	Area	Percent of total
Conservation Open Space	142.8	64.7
Institutional	24.4	11.1
Open Space	8.9	4.0
R 15+	10.0	4.5
R 4-10	34.5	15.7

TABLE 4-18: Zoning SR-6

Zoning	Area	Percent of total
Single-family Residence Zone	156.6	71.0
Multifamily Residence Zone (R4)	56.9	25.8
Limited Multifamily Residence Zone (R4)	7.1	3.2

Conservation open space/open space is the predominant land use within this reach. Residential land use is located in the middle of the reach along both banks, with institutional land use, including The Sisters of the Holy Name and the Spokane Falls Community College, located on the east bank upstream from Meenach Bridge.

Built Structures/Impervious Surfaces/Development Intensity

Development occurs in the middle section of the reach on both banks. On the east bank is Sans Souci Mobile Home Park with a land use designation of R4-10. On the west bank is River Run, a recent (2005-2006) single-family residential R4-10 development developed under the existing Shoreline Master Program. River Run is constructed on land that was previously used for gravel mining. About three percent of the reach is covered with impervious material and one percent covered by buildings. Most of the structures within the 200-foot buffer are single-family residences and the impervious surfaces are associated with roads and driveways.

Due to steep slopes, highly erodible soils, and the existing long-term institutional uses on areas that could be developed, development potential within the shoreline buffer is considered moderate within this reach. Viewpoints do not appear substantially impacted within this reach, with only minor impacts due to residential development.

Transportation

Roadways within the reach are mainly limited to local access roadways with the exception of Meenach Bridge that provides the only river crossing for vehicles between Maple Street and Seven Mile Bridge. A paved parking area for Three Springs is located within the shoreline buffer area, just upstream of Meenach Bridge.

Utilities

Utilities within the reach are generally limited to local residential services. An old bridge is located below Sans Souci that apparently carried a water line, but is currently abandoned. Two CSO and nine storm drain outfalls are located in the reach. An overhead power line crosses the river upstream of Meenach Bridge and a natural gas distribution line crosses at the bridge.

Shoreline Modifications

In general, the shoreline within this reach has not been substantially modified with the exception of the Sans Souci vicinity, which has a stabilized bank. Much of the shoreline vegetation along Sans Souci has been planted with non-native vegetation and vegetation has been removed to provide river views for the residents.

Environmental

Zinc and lead are listed as impaired with a water quality control plan in affect (Category 4B). There are no 303(d) list impairments. According to data from the Department of Ecology, there is one toxic cleanup site within this reach.

Shoreline Access and Use

Access within much of this reach is limited due to the steep banks, adjacent private property, and limited roads. The limited road system and steep banks will limit future development but due to private ownership, the potential for additional development along or close to shorelines is considered to be high. There are approximately 30 acres of mostly undeveloped park land within the shoreline buffer. The Three Springs area provides parking and hiking trails on portions of the east bank. The Three Springs area, and downstream from the Meenach Bridge (Inventory Reach 7) has been identified as an area

heavily used for angling at the February 15, 2007 Spokane River Anglers Forum. This stretch is home to the highest rainbow trout counts on the river, but is currently very difficult to access (Spokane River Anglers' Forum 2/15/07). Please see SR-5 and SR-7 for discussion of access improvements at the Meenach Bridge that would enable non-motorized floating through the SR-6 section. Other uses along this reach include hiking and mountain biking on mostly informal trails.

Archaeological/Historic Resources

No sites on either the local or state registers or the NRHP are noted within the shoreline jurisdiction. Archaeological sites were identified. Cultural and archeological resource information may be obtained from the Spokane City-County Historic Preservation Office.

Natural Environment

Soils

Soils within the reach are mixed, but approximately half are noted as riverwash. Approximately 25 percent of the area is noted as Springdale gravelly loamy sand. These soils are located on the steep slopes and have a high infiltration rate, low runoff potential and are rated as a severe erosion hazard. The remainders of the soils are rated as a slight erosion hazard.

Degraded Areas/Eroding Shorelines

One area at the outside of a northward bend upstream of Meenach Bridge is designated as degraded or eroding shorelines. The reach has geological hazard areas documented under the City Critical Areas mapping.

Vegetation

Within this reach riparian vegetation covers 40 acres (18 percent) with upland vegetation covering 87 acres (39 percent). This reach exhibits good variation of plant species. Sixteen sample sites were established in this reach. These sample plots showed an area coverage of 75 percent native species. Significant native species include Ponderosa pine, coyote willow, thin leaf alder, and black cottonwood. Significant non-native species include American elm, morning glory, and reed canarygrass. Downstream of the Sans Souci residential development on the east bank, the Three Springs area and upstream private properties include up to 88 percent native vegetation. This is an area that should be protected.

Priority Habitats/Wildlife Corridors

Ninety-four percent of this reach is designated as Urban Natural Open space by the WDFW. Six percent (13.6 acres) is designated as old growth/mature priority habitat. White-tailed deer, wintering bald eagles, nesting red tailed hawks, cavity-nesting ducks and woodpeckers have been noted in the downstream reaches of the Spokane River. Trout and other game fish have been noted in past surveys, as well as other mammals. The reach, along with adjacent reaches, is particularly important in that they are almost entirely functional, natural habitats for fish and wildlife. While no areas are designated as Wildlife Heritage Sites within the reach, osprey, merlin, and other raptor species are known to forage and nest in the area, as are heron and several large mammal species.

Critical Areas

Table 4-19 summarizes the critical area inventory for this reach.

TABLE 4-19: Critical Area Inventory SR-6

Critical Area	Description
Wetlands (1)	A 1.6 acre seasonal marsh was identified in this reach, covering 0.7 percent of the total jurisdictional area. The wetland is located at a bar formed under Meenach Bridge.
Aquifer Recharge	Spokane/Rathdrum Prairie Aquifer Boundary – Spokane Aquifer Sensitive Area The reach is within the one-year travel time for down-gradient wells (Wellhead Protection).
Fish and Wildlife Conservation (2)	Riparian habitat areas (RHA) extend to the outer edge of the 100-year flood plain, the CMZ or 250-feet past the OHWM, whichever is greater.
Geologically Hazardous	36 acres (16 percent) have slopes greater than 30 percent, 24 acres (11 percent) are rated for slopes and erosive soils, and 23 acres (11 percent) are rated for highly erosive soils.
Frequently Flooded (3)	28 acres have been identified as within the 100-year floodplain. The floodplain areas are generally in a narrow band along most of the reach.

1. Wetlands based on EWU Wetland Survey.

2. City Municipal Code 11.19.2560

3. 100 year flood plain from FEMA maps.

4.10.2 Ecological Function Characterization – SR-6

Hydrologic

The stream flow in this reach is riffle-pool in nature, with weakly developed pools and high sinuosity. The channel is both vertically and laterally stable due to the prevalence of boulders and bedrock substrate, and stable valley form. Though the river shows strong meander formation, it is likely due to historic, valley forming floods, and not from periodic channel forming processes (such as 10-, 20-, or even 500-year floods). The substrate is boulder and cobble. The hydrologic regime is generally controlled by dam operations upriver, though Latah Creek and aquifer inflow contributes flows.

Shoreline Vegetation

Vegetation along this reach provides excellent habitat and is predominately native with diverse species. This reach has the least development impacts along the Spokane River within the City and has the most area coverage for both riparian and upland vegetation.

Hyporheic

Hyporheic functions appear to be functioning normally in this reach. Groundwater upwelling from the Three Springs area enters along the north bank, just upstream from Meenach Bridge. This is a unique area that is currently partially protected as conservation land.

Habitat

Habitat for fish and wildlife appear to be functioning at excellent levels in this reach. Water level modification and recreational use of the riverbanks may impede function to a small extent, but in general, outside of the Sans Souci development, habitat function is very high through this reach.

4.10.3 Ecological Function Assessment – SR-6

The 2005 SCCD PFC study rated this reach as properly functioning, and in good Ecological Function for 100-percent of its length. Based on the field survey, only two of the eight pathways may not be functioning adequately within this reach.

- Upland habitats outside the shoreline jurisdiction appear to be in generally good shape and functioning relatively well for forage and migration. Riparian plant species diversity is high and contains large areas of mostly natural vegetation.
- Flows are seasonably variable, but flow from the aquifer to the river moderates low flows and decreases water temperature. Along this reach the channel is entrenched and stable.
- Shorelines have generally not been altered and provide habitat and desirable shoreline functions. Almost the entire reach provides a good framework for aquatic and shoreline functions.
- Large woody debris (LWD) was not observed in this reach in sufficient amounts to create structured habitats.
- Water quality is generally good, within the limits of the Spokane River system as a whole. During spring runoff, Latah Creek provides sediment, but most appears to be conveyed downstream.
- The sediment regime is low and does not replenish gravels for fish spawning. Gravel replenishment may be somewhat better than the upstream river segments due to Latah Creek providing a high sediment load during spring runoff, however much of the sediment is smaller soil particles and is conveyed downstream.

4.10.4 Reach Observations – SR – 6

This reach would benefit from protective measures to preserve existing function. The following opportunities should be considered:

- Extend the Three Springs conservation area upstream to the Sans Souci development as private property becomes available.
- Consider development of a conservation area on the point across the river from Three Springs.
- Remove the abandoned utility bridge below Sans Souci or re-build as a pedestrian bridge.

4.11 Spokane River: Reach SR-7

Reach SR-7 is downstream of Meenach Bridge (RM 69.8) to the northern City limits (RM 61.9). Within this reach most of the west bank of the river is in Spokane County or Riverside State Park and large areas of the east bank are within Riverside State Park. The shorelines within Riverside State Park were not within the City shoreline jurisdiction when the inventory was done but were added to the City in the fall of 2006. These areas were not inventoried. Within this reach significant features include the Downriver Golf Course, the City Wastewater Treatment Plant and Riverside State Park.

4.11.1 Inventory – SR-7

Built Environment

Land Use/Zoning

Tables 4-20 and 4-21 show the land use and zoning designations within this reach taken from the City GIS layers.

TABLE 4-20: Land Use SR-7

Land Use	Area	Percent of total
Conservation Open Space	280.4	51.2
Institutional	11.5	2.1
Open Space	7.1	1.3
R 4-10	11.9	2.2

Note: Land use GIS layer includes portions of Riverside State Park.

TABLE 4-21: Zoning SR-7

Zoning	Area	Percent of total
Single-family Residence Zone	173.4	31.7
Multi-family Residence Zone (R4)	44.3	8.1

Note: Zoning GIS layer does not include Riverside State Park.

Land use within this reach is almost exclusively Conservation Open Space with the exception of the Spokane Wastewater Treatment Plant.

Built Structures/Impervious Surfaces/Development Intensity

Structures along this reach include the treatment plant and Aubrey White Parkway. Less than one percent of the reach is covered in building footprints and approximately two percent of the reach is covered by impervious surface. Two buildings owned by Fairchild Air Force Base Municipal (AFB) for water wells are located on the west bank, as is a navigation beacon for Spokane International Airport.

Steep bluffs in the southern portion of this reach limit potential for future development within the shorelines. The Wastewater Treatment Plant is being upgraded and the treatment plant, utilities, and Aubrey White Parkway will require maintenance in coming years. Vacant land near RM 63.5 has a land use designation of conservation open space but is zoned as single-family residence and may have the potential for development. Viewpoints do not appear to be substantially impacted within this reach.

Transportation

Aubrey White Parkway parallels the river along much of the east bank. On the west bank, downstream of Meenach Bridge, a private gravel road provides access to the Fairchild AFB water wells and SIA navigation beacons.

Utilities

The Spokane Wastewater Treatment Plant, located within this reach, provides wastewater treatment for the City, parts of Spokane County, the City of Spokane Valley, Airway Heights, Fairchild Air Force Base, and the Town of Millwood. It is the largest wastewater plant on the Spokane River. At Meenach Bridge, and from the intersection of Columbia Court with Aubrey White Parkway, a sewer main is located under Aubrey White Parkway. Three CSO outfalls and two storm-drain outfalls are located in this reach. A steel bridge carrying a petroleum pipeline is located at the northern edge of the treatment plant.

Overhead power lines cross the river at two locations, and a natural gas-line crosses the river at approximately river mile 63.5.

Shoreline Modifications

Much of the shoreline within this reach is in a natural state with the exception of the shore below the wastewater treatment plant. The treatment plant is built on fill and is riprapped to protect the shoreline.

Environmental

Fecal coliforms are listed on the 303(d) at the permanent monitoring station at Riverside State Park. Zinc and lead are listed as impaired with a water quality control plan in affect (Category 4B), between the treatment plant and Riverside State Park, and below the Bowl and Pitcher at Riverside State Park. PCBs are listed on the 303(d) list downstream from the Bowl and Pitcher.

The wastewater treatment plant is listed as a hazardous waste generator in Ecology's database. These wastes have come from vehicle maintenance and water laboratory functions.

Shoreline Access and use

Informal access to the river is possible along much of the river within this reach. Aubrey White Parkway provides vehicular access and many informal pull-offs. Riverside State Park is in the middle of the reach and provides formal public access to this portion of the river. The recreational inventory conducted by Avista Corporation identified public recreational sites within this reach, the most commonly used located just downstream of Meenach Bridge on the east bank, and just downstream from the sewage treatment plant. This is a highly popular recreation area, used by hikers, bikers, anglers, and paddlers.

Archaeological/Historic Resources

No sites on either the local or state registers or the NRHP are contained within the shoreline jurisdiction. Archaeological sites were identified. Cultural and archeological information may be obtained from the Spokane City-County Historic Preservation Office.

Natural Environment

Soils

Soils within the reach are mixed but are primarily in the Springdale gravelly loam series. These soils have a slight erosion hazard and are typically well drained. Approximately 20 percent of the area is noted as Springdale gravelly loamy sand. These soils have a high infiltration rate, low runoff potential and are rated as a severe erosion hazard.

Degraded Areas/Eroding Shorelines

No areas are designated as degraded or eroding in the jurisdiction, but the reach has several erodible soil and high slope hazard designations.

Vegetation

Within this reach riparian vegetation covers 37 acres (seven percent) with upland vegetation covering 93 acres (17 percent). This reach has good natural variation of plant species. Ponderosa pine communities encroach down to the water's edge in many portions of the lower reach. Black cottonwood and willow communities are well established along much of the reach.

Other herbaceous species present include poison oak, Oregon grape, balsamroot, common tansy, and spotted knapweed. Nineteen sample sites were established in this reach. These sample plots showed area coverage of 49 percent native species.

Priority Habitats/Wildlife Corridors

Ninety-nine percent of this reach is designated as Urban Natural Open Space by the WDFW, while a small portion of the reach is designated as cliff/bluff habitat. A number of sensitive species are thought to be present in the reach and are designated Wildlife Heritage Sites. Many of the Heritage Sites are within Riverside State Park. Wintering bald eagles, nesting red-tailed hawks, cavity-nesting ducks and woodpeckers have been noted in the downstream reaches of the Spokane River. Trout and other game fish have been noted in past surveys, as well as deer, river otter and other mammals. Reptiles, amphibians and crayfish are found in the area. The WDFW indicates that the large open tracts of upland Ponderosa pine forests, adjacent to this reach, has a large influence on the riparian system, adding biodiversity. The reach, along with its adjacent reaches, is particularly important in that they are almost entirely functional, natural habitats for fish and wildlife.

Critical Areas

Table 4-22 summarizes the critical area inventory for this reach.

TABLE 4-22: Critical Area Inventory SR-7

Critical Area	Description
Wetlands (1)	Two wetland areas were identified, covering 0.2 acres.
Aquifer Recharge	Spokane/Rathdrum Prairie Aquifer Boundary – Spokane Aquifer Sensitive Area. The reach is within the one-year travel time for down-gradient wells (Wellhead Protection).
Fish and Wildlife Conservation (2)	Riparian habitat areas (RHA) extend to the outer edge of the 100-year flood plain, the CMZ or 250 feet past the OHWM, whichever is greater.
Geologically Hazardous	54 acres (10 percent) have slopes greater than 30 percent, 43 acres (eight percent) are rated for slopes and erosive soils, and 52 acres (nine percent) are rated for highly erosive soils.
Frequently Flooded (3)	18 acres have been identified as within the 100-year floodplain. About 10 acres of the flood plain is located above the Treatment Plant. The remainder is spread out along the reach.

1. Wetlands based on EWU Wetland Survey.

2. City Municipal Code 11.19.2560

3. 100 year flood plain from FEMA maps.

4.11.2 Ecological Function Characterization – SR-7

Hydrologic

The stream flow in this reach is riffle-pool in nature, with developed pools and high sinuosity. The river flows through deep valley walls of boulders, cobble, and also erodible soils. The channel is both vertically and laterally stable due to the prevalence of boulders and bedrock substrate, and stable valley form. Though the river shows strong meander formation, it is likely due to historic, valley forming floods, and not from periodic channel forming processes (such as 10-, 20-, or even 500-year floods). The substrate is boulder and cobble throughout, with significant bedrock outcroppings at the Bowl and Pitcher and Devil's Toenail. The hydrologic regime is controlled upriver by upstream dam operations for the majority of the reach, and by the operations at Nine Mile Falls Dam on the lower section.

Shoreline Vegetation

Shoreline and upland vegetation is relatively continuous with significant areas of natural vegetation well established. Both riparian and upland habitat is considered good.

Hyporheic

Hyporheic functions are functioning normally in this reach.

Habitat

Habitat for fish and wildlife is functioning at or near pristine levels in this reach. Water level modification, recreational use of the riverbanks, and the backwater from Nine Mile Dam may impede function to a small extent.

4.11.3 Ecological Function Assessment – SR-7

The 2005 SCCD PFC study rated this reach as properly functioning, and in good Ecological Function for 100-percent of its length. Locally, the sewage treatment plant may impact both migration and aquatic habitat. A management plan is in place.

- Upland habitats outside the shoreline jurisdiction appear to be generally in good condition and functioning well for forage and migration. Downriver Golf Course is a large recreational tract of land that may limit migration. Many of the upland areas have experienced wildfires and are in the process of recovery. Riparian plant specie diversity is relatively high, containing large areas of mostly natural vegetation.
- Flows are variable, but flow from the aquifer to the river moderates low flows and decreases water temperature. Along this reach the channel is entrenched and stable.
- Generally, shorelines have not been significantly altered and provide habitat and desirable shoreline functions. Almost the entire reach provides a good framework for aquatic and shoreline functions. In the downriver section, fluctuations in the elevation of the Nine Mile Dam operating pool expose shorelines and disrupt shoreline habitat.
- Large woody debris (LWD) was not observed in this reach in sufficient amounts to create structured habitats.
- Water quality is generally good within the limits of the Spokane River system. Fecal coliforms are listed on the 303(d) list at Riverside State Park. During spring runoff, Latah Creek provides a large sediment load, but most appears to be conveyed downstream.
- The sediment regime is low and does not replenish gravels for fish spawning. This reach is somewhat better than the upstream river segments due to Latah Creek providing a high sediment load during spring runoff; however, much of the sediment is conveyed downstream.

4.11.4 Reach Observations – SR - 7

This reach would benefit from protective measures to preserve existing function. The following opportunities should be considered:

- Remove invasive plant species. One location was noted as having a small stand of Japanese knotweed on the east bank, just upstream from the sewage treatment plant.
- Restore bank along the treatment plant by planting native vegetation.
- Enhance areas of bare banks with native tree and shrub plantings.

- Consider improving access at the Meenach Bridge, just downstream from the treatment plant, and at Plese Flats, to better accommodate raft and drift boat use. Currently, boat launches below the Meenach Bridge and at Plese Flats are gated and locked, restricting or eliminating use.

4.12 Inventory Reach Comparison

The preceding sections and attached appendices including the Map Portfolio (Appendix H), as well as the GIS layers, provide a detailed inventory and analysis of the shorelines within the City of Spokane. This information has been compiled in a format that follows the guidelines of WAC 173-26 *Shoreline Master Program Guidelines*. This format, and the inventory reach breaks developed are intended to assist the City in the development of environment designations, goals, policies, and regulations required for implementation of the Shoreline Master Program.

The information contained in this inventory compiles previous work by others as well as original work generated for this document. Important resources included work prepared by the City of Spokane, Spokane County, Spokane County Conservation District and many other agencies and work groups within the Spokane River and Latah Creek watersheds.

Table 4-23, *Spokane River Reach Comparison*, provides a summary of the inventory and characterization of the reaches for the Spokane River.

SHAPING SPOKANE VOLUME III, APPENDIX D



TABLE 4-23
Spokane River Reach Comparison

City of Spokane Shoreline Master Program Update
Inventory and Analysis
July 2008

		SR-1	SR-2	SR-3	SR-4	SR-5	SR-6	SR-7
Area (acres)		117	262	80	183	143	220	550
Built Environment								
Land Use-Open Space		9%	58%	39%	26%	84%	69%	52%
Impervious Area		2%	15%	21%	24%	17%	3%	2%
Transportation Impacts		North Bank-High	High	Moderate	High	Moderate	Low	Moderate
Utility Impacts		Low	High	Moderate	High	Moderate	Low	Moderate
Shoreline Armoring		4%	2%	12%	28%	8%	0	0
Environmental	303(d) Listed Permitted Areas	DO, PCB's None Listed	PCB's 6 locations	PCB's, Zinc 5 locations	DO 6 locations	None 9 locations	None 1 location	FC 1 location
Access	Parkland	4 acres	68 acres	4 acres	29 acres	42 acres	30 acres	68 acres
	Trails	Formal/Informal	Formal/Informal	Limited	Formal/Informal	Informal	Informal/Limited	Informal
	Formal Access	2 locations	5 locations	0 locations	2 locations	2 locations	0 locations	5 locations
Natural Environment								
Erosive Soils		<1.0%	<1.0%	0	<1.0%	33%	23%	17%
Vegetation Coverage	Riparian	4%	13%	8%	5.30%	14%	18%	7%
	Upland	6.6%	17%	6%	7.30%	29%	39%	17%
	Native	6%	61%	68%	80%	N/A	75%	49%
Frequently Flooded		13 acres	53 acres	9 acres	4 acres	12 acres	28 acres	18 acres
Priority Habitats		None	None	Yes	Yes	None	Yes	Yes
Function								
Hydrologic (SCCD-PFC)		Properly Functioning	Properly Functioning	Properly Functioning	Properly Functioning	Properly Functioning	Properly Functioning	Properly Functioning
Ecological (SCCD Rating)		Fair	Fair	Fair	Poor to Fair	Poor to Fair	Good	Good
Vegetation		Discontinuous	Narrow/Continous	Narrow/Continous	Narrow/Continous	Diverse/Well Established	Diverse/Well Established	Diverse/Well established
Hyporheic		Adequate	Adequate	Adequate	Limited	Adequate	Good	Good
Riparian Habitat		Intact/altered	Narrow/Well Developed	Intact	Limited	Excellent	Excellent	

5.0 LATAH CREEK CHARACTERIZATION AND FUNCTIONS

This section presents the shoreline characteristics and functional analysis for Latah Creek. The section begins with a general description of Latah Creek and then provides a more detailed narrative of the inventory components and functional elements for each of the Latah Creek reaches developed for the inventory. **Figure 5-1** shows the six reaches of Latah Creek that were delineated for inventory purposes. The Map Portfolio (Appendix H) contains maps showing the significant features discussed in the narrative.

For each inventory reach, the following format is followed:

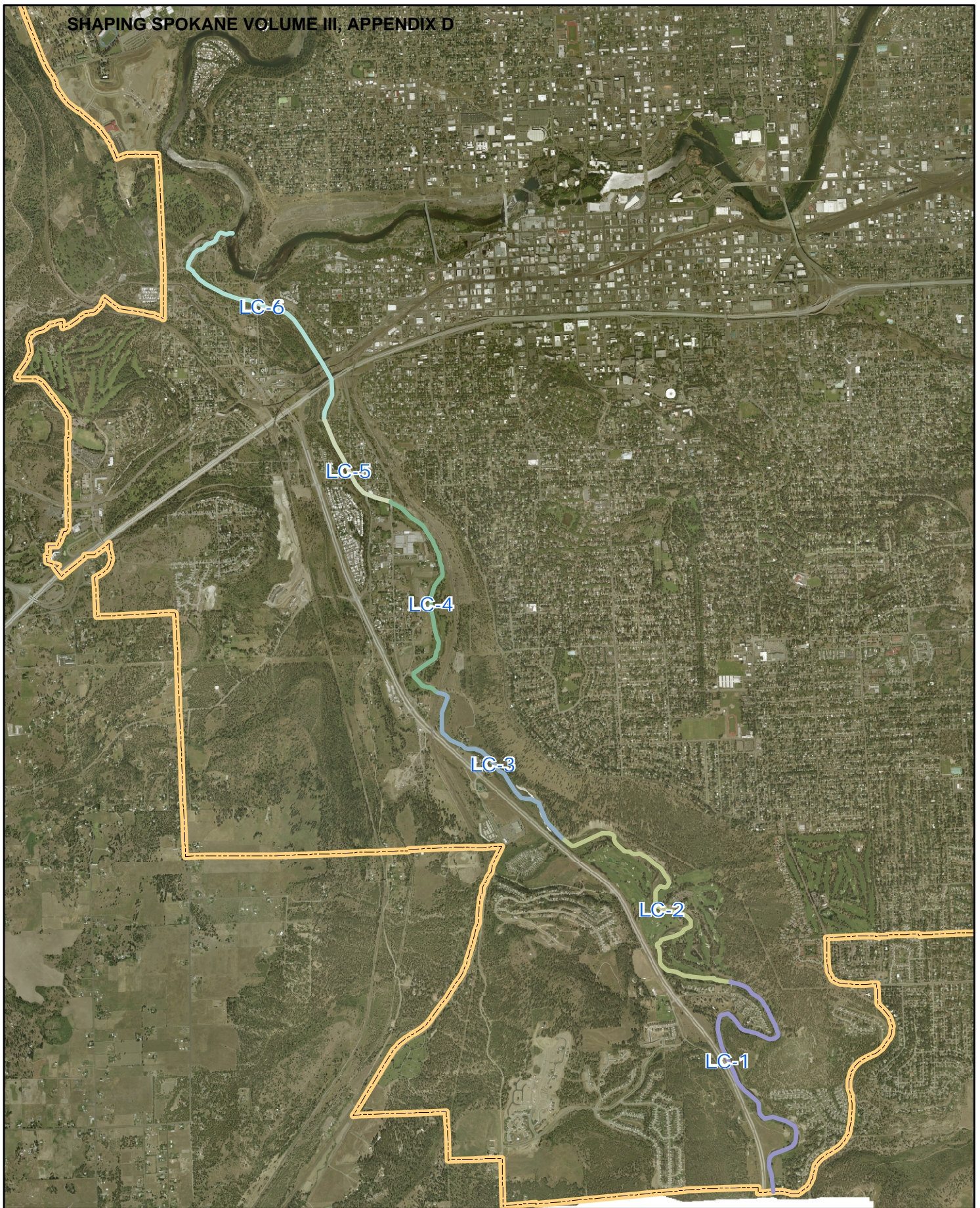
- The first section provides a description of each inventory element, and with the tables provided in Appendix D, and the Geographical Information System (GIS) layers developed, provides a comprehensive inventory of both the built and natural environments.
- The second section characterizes the ecological functions within each reach focusing on the elements discussed in WAC 173-26-201(3)(d)(c).
- The third section provides an assessment of the ecological functions focusing on the elements discussed in WAC 173-26-201(3)(d)(D).
- The fourth section provides specific observations and describes potential opportunities for protection and restoration of shoreline functions.

5.1 Latah Creek Overview

Latah Creek is located in both Idaho and Washington states, with a drainage area of approximately 430,000 acres (260,000 acres in Washington). The watershed covers portions of southern Spokane County, Whitman County, and Benewah and Kootenai Counties in Idaho. Flows range between 200 cfs during spring runoff to two cfs during the summer months. Flows over 20,000 cfs have been recorded. Latah Creek is not dammed, though opportunities to increase summer flows have been discussed during WRIA 56 planning activities. **Figure 5-2** shows the Latah Creek drainage basin.

Agricultural land covers 64 percent of the basin. The agricultural land is mostly in non-irrigated, annual small grain production. Development of agriculture in the watershed has led to a reduction of riparian vegetation and channel alterations. Removal of native riparian vegetative buffers has reduced the natural filtering function and increased the rate of stream bank erosion. The upper watershed also has livestock that, in many cases, have unrestricted access to Latah Creek and its tributaries. The agricultural and ranching practices have resulted in degradation of the stream banks and riparian areas contributing to high stream temperature and low dissolved oxygen concentrations. Forestry practices have cleared much of the upper watershed creating higher peak flows and sediment loading, while decreasing summer low flows.

Significant amounts of sediments have been introduced into the study area from the upper watershed. In the upper Latah Creek area, much of the farmed soil is derived from loess deposits. The present day loess deposits are areas where sheet and rill erosion tends to account for almost 90 percent of the soil loss from cropland (WRIA 56 Planning Unit, 2005).



Legend

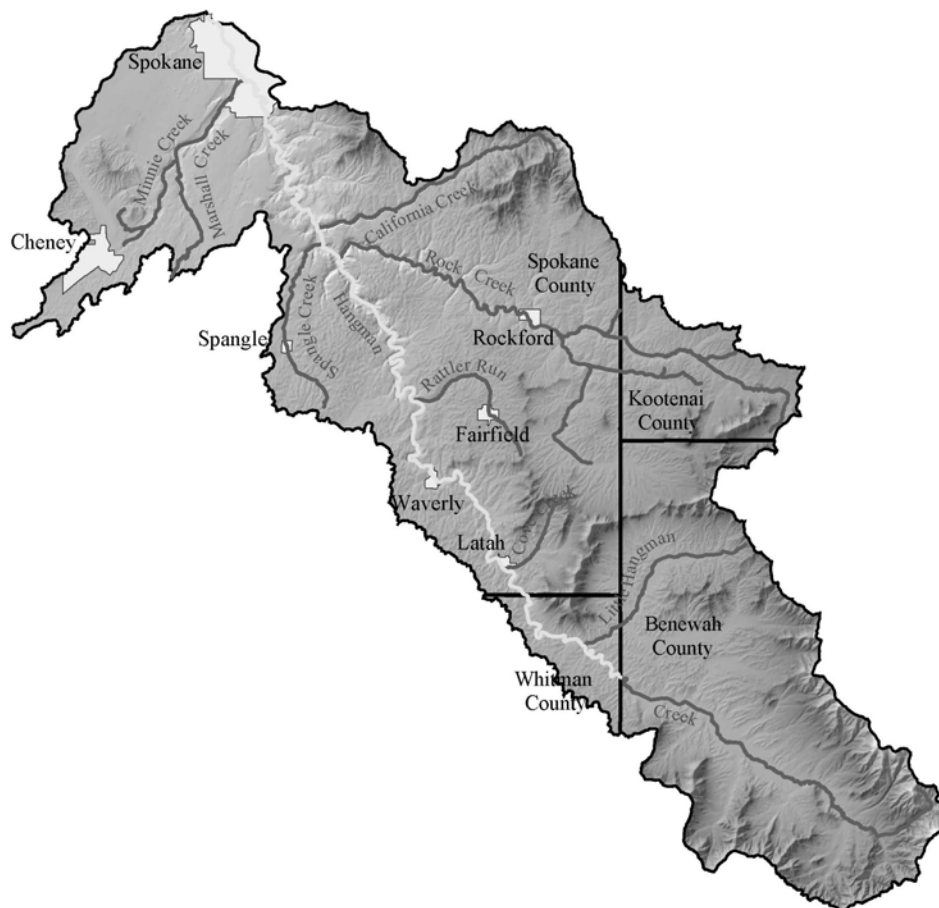
 City Boundary



0 0.25 0.5 1
Miles

Figure 5-1. Latah Creek Reaches

City of Spokane
Shoreline Master Plan
March 2007



Source: Spokane County PFC Assessment, 2005



Figure 5-2. Latah Creek Basin

City of Spokane
Shoreline Master Program
March 2007

Within the City limits, Latah Creek can be divided into an upper section, Hatch Road to the Empire Way Bridge, and a lower section, Empire Way Bridge to the confluence, based on geology, land use, and vegetation. For inventory and analysis, each section was further sub-divided into Inventory Reaches discussed later in this section.

5.1.1 Upper Latah Creek

Upper Latah Creek is characterized by high banks to the east and SR-195 to the west. The upper section is actively meandering as evidenced by gravel bars and undercutting. The existing low-development density allows the stream to function somewhat naturally within the meander limits confined by SR-195. SR-195 has reduced the active meander zone and floodplain of Latah Creek. Vegetation within the creek is dominated by non-native reed canarygrass and native coyote willow in the riparian area, and a mix of native/non-native vegetation in the upland areas.

Much of the land along the upper reach is public. There are large areas of undeveloped parkland. In addition to the parkland, the City's Creek at Qualchan Golf Course is located along Latah Creek. Development pressure is anticipated to occur in the future along this section of the creek.

The shorelines and adjacent upland areas along Upper Latah Creek are used by residents of the Latah Valley and of Spokane's South Hill. There are numerous informal trails on the slopes between the South Hill and Latah Creek used by hikers and bikers. Erosion of the hillsides from the informal trail system has been and is a concern. Campion Park, a City park with little formal improvements, is used by mountain bikers and recreational paddlers as an access, and also by birders.

5.1.2 Lower Latah Creek

The lower section of Latah Creek is characterized by relatively stable banks, many of which have been altered for flood protection and railroad fill. This section is somewhat entrenched and relatively stable. The major exception to this is the high bank at the confluence with the Spokane River which is actively eroding.

The upper half of the lower section is predominately low- to moderate-density residential in the Latah Creek Neighborhood. Access is generally adequate from public roads, but movement along the shorelines is limited. The shorelines have been generally altered to reduce flooding and to accommodate private uses. The east side of the valley is predominately a railroad grade. Development pressure is anticipated in the future along this section of Latah Creek. Downstream of the 11th Street Bridge, Latah Creek flows through the City's High Bridge Park/Peoples Park to its confluence with the Spokane River. Access is good and use is moderate in this area.

The shorelines along Lower Latah Creek are used by residents of the Latah Valley and residents of the City and the region. High Bridge Park/Peoples Park provides access to the shorelines and is moderately used by many groups. There appears to be ample room within these park systems to increase use.

5.2 Latah Creek Ecosystem-Wide Processes

Identifying ecosystem-wide processes that affect the shoreline is part of the comprehensive process to prepare or amend a shoreline master program. WAC 176-26-201(3)(c)(i) defines the processes that must be identified and assessed to determine their relationship to ecological functions present within the SMP jurisdiction. WAC 176-26-201(3)(c)(i)(II) defines the scope of identification and assessment. It states: *“This characterization of ecosystem-wide processes and the impact upon the functions of specific habitats and human health and safety objectives may be of a generalized nature.”* The following elements were identified as important to the Latah Creek SMP Jurisdiction to meet the requirements of WAC 176-26-201(3)(c)(i).

5.2.1 Study Area Geology

Geology within the study area is characterized by unconsolidated soils over bedrock. Bedrock includes Miocene basalt flows with pockets of Tertiary biotite, granite, and granodiorite (WRIA 56 planning unit 2005). Unconsolidated soils consists of three major alluvial deposits: 1) fine grained lacustrine soils including the Latah formation, composed of fine laminations of silts and clays with low permeability; 2) sand, gravel, and cobbles, and 3) post-Missoula flood alluvium. Silts and clays of the Latah and similar formations form resistant soil bands when near the water’s edge, and form vertical banks above them. When unconsolidated sands and gravel underlie the fine grained formations, the sands and gravels tend to wash out, undercutting and exposing silt and clay layers. This undercutting results in block slumps and rapid bank loss (SCCD 2000).

5.2.2 Hydrologic/Stream Channel

According to the SCCD PFC study, Latah Creek is rated the most damaged stream system in Spokane County. In the study area, the stream channel is mostly entrenched with a few point bars and small floodplain areas. The channel is laterally unstable, but vertically stable in most areas (SCCD 2005). Bank erosion is extensive due to the “flashy” flow regime and the unconsolidated sands and gravels underlying the fine-grained formations. SR-195 has affected the hydrology of Latah Creek within the study area. Bank armoring to reduce erosion and protect the road prism has constrained the sinuosity, truncated meanders, and has prevented the channel and associated floodplains from developing in a manner that can adequately absorb and dissipate energy during high flow events.

5.2.3 Vegetative Communities

Reed canarygrass and introduced pasture grasses are dominant in most of the study area, but stands of black cottonwood and mixed shrubs are found. Wood’s rose, coyote willow, Douglas hawthorn, golden willow, and snowberry are common shrub species. Common tansy and other weedy forbs have invaded much of the area, and grazing and urban encroachment limit riparian plant growth. The stream has been channelized through much of this area to accommodate the road systems or for flood control. Many of the former meanders are cut off, increasing the stream gradient. Streambanks are unstable, making it

difficult to re-establish riparian vegetation. Riprap has been placed near roads and utility rights-of-way, discouraging the establishment of riparian vegetation.

The presence of reed canarygrass throughout Latah Creek inhibits re-establishment of native species such as coyote willow and box elder. Reed canarygrass does not provide adequate ecological benefits such as bank stabilization, large woody debris, forage for wildlife and other benefits that native species provide. Active restoration efforts would be required to establish native plant communities that could provide canopy cover allowing other species to replace reed canarygrass. As an example, a natural plant community can be seen in reach LC-3 on the east bank just above the railroad trestle.

5.2.4 Water Quality

Water quality in Latah Creek has been impacted by upstream agricultural and forest practices, and within the City by combined sewer and stormwater discharges.

Latah Creek within the study area is on the State of Washington Impaired Waters list, or 303(d) list for pH, temperature, pentachlorophenol, and fecal coliforms. It has been listed as a Category 2 Water of Concern for temperature, dieldran, 4,4'-DDE and zinc. All occurrences are found downstream from the Empire Way Bridge.

The *Hangman Creek Water Resources Management Plan* identifies three of the six reaches within the study area as having a high pollution potential. Upstream of the study area the plan identifies four of twenty-one reaches as having a high pollution potential. Three of those reaches are adjacent to the study area.

Water quality in Latah Creek is dependent on stream flow. Three flow regimes occur in Latah Creek, low flow, moderate high flows, and extreme high flood flows. Each flow regime has a unique water quality profile. Under low flows, the condition of several sections of Latah Creek becomes semi-stagnant. The slower water velocities result in low dissolved oxygen, higher water temperatures and more algae and plant growth. Fecal coliform bacteria and pH commonly exceed state water quality standards during low flow conditions. Moderately high flows typically have the best water quality. The water is better oxygenated, cooler, and pollutants are diluted and flushed out. At moderate high flow, the overland component is small in comparison to groundwater inflow. Overland flow is significant during extreme high flood flows. Overland flow, or surface runoff, contains pollutants including sediment, de-icing chemicals, animal wastes, oil and grease, heavy metals, pesticides, and lawn and farm fertilizers. Water quality parameters related to surface runoff, including turbidity and suspended sediment, generally exceed state water quality standards during extreme high flood flows. (WRIA 56 Planning Unit, 2005)

5.2.5 Shoreline Modifications

- *Fill in Floodplain*

Fill material placed during the construction of SR-195 and the Burlington Northern Railroad has altered the Latah Creek floodplain within the City. Much of this work was done during and

before the 1930s. Levees and hardening of the stream bank for protection of residences and utilities have resulted in shoreline modifications.

- *Transportation Facilities Intersecting Floodplain*

SR-195 is located along much of the floodplain. The Burlington Northern Railroad track is also located along the lower portion of Latah Creek. Low level bridges cross the creek at a number of locations. During the 1997 flooding, debris intercepted some of these bridges resulting in backwater conditions and minor flooding. At the lower end of the creek (High Bridge Park), three bridges cross the creek at a high level.

- *Development within Channel Migration Zones*

Latah Creek is a meandering stream that has been impacted by development, most notably the construction of SR-195 which reduced the width of the floodplain. The Latah Creek Neighborhood is protected by partially hardened banks and a levee system. Fill associated with the railroad grade on the east side of the valley has stabilized portions of the bank. It appears that Latah Creek is still adjusting to development within its floodplain, and combined with the sediment load from upstream agricultural activities, is actively meandering. Protection of what remains of the channel migration zone is important for the proper functioning of Latah Creek.

5.3 Latah Creek Inventory

The inventory descriptions for each inventory reach include the area within the meander belt developed by the SCCD, and a 200-foot buffer. Inventory data tables included in Appendix C were prepared from GIS information collected from agencies and developed from field work conducted in June 2006. The following sections describe significant features of the built and natural environments determined by the shoreline inventory.

The SCCD PFC study was a significant resource used for the inventory. The SCCD study divided the river into study reaches as does this inventory. In most cases, the SCCD study and City of Spokane Inventory reaches are slightly different since the goals and purposes of each were different. Conclusions made in the PFC study address each of their study reaches as a whole, and at any one point the evaluation of *proper functioning condition* and ecological condition may vary from the reach as a whole. Since the defined reaches are slightly different, the City of Spokane Inventory represented the SCCD information as coverage percentages; for example, an inventory reach might be noted as being in 80 percent fair ecological condition and 20 percent poor ecological condition. This is reflective of overlaps within the two reaches. Care was taken to ensure that the segmentation of the SCCD data did not misrepresent actual conditions. Based on the City of Spokane field work completed in 2006, this appears to be a good representation of the shoreline conditions using the data available. An overview of what the PFC and ecological ratings represent are described below. A more detailed description is provided in Appendix B, *Spokane River Inventory Data Tables*.

- **Properly Functioning Condition (PFC)** represents the physical ability of a reach to withstand a 25- to 30-year hydrological event. Properly functioning reaches have characteristics such as well-established riparian vegetation, an active floodplain, and stable channels. Sites considered to be

properly functioning may not provide other important ecological or biological values and functions.

- **Ecological condition ratings** reflect the current structural diversity, density, and continuity of native plant communities. Riparian vegetative communities trap sediments and nutrients from surface runoff and provide a matrix of root systems that serve as effective filters, minimize stream bank erosion and flooding damage, assist stream flow maintenance, and moderate temperatures.

The Ecological Function Assessment for each of the inventory reaches in this document describes the eight processes and functions identified in the SMA as summarized in Section 3.2. Some of these processes and functions, but not all, are similar to those used in the SCCD PFC study ratings. Summary information from the PFC study was used in this inventory assessment.

5.4 Latah Creek: Reach LC-1

Reach LC-1 begins at the City Limit, or Hatch Road (RM 8.1), and extends to the Qualchan Golf Course bridge near the Bridlewood residential development (RM 6.0). Within this reach significant features include the Hatch Road Bridge; steep eroding banks impacting developments at the top of the bluff; the Bridlewood residential development; and constriction of the meander zone due to the location of the SR-195 alignment. The meander zone and a 200-foot buffer constitute the inventory zone which is a land area of approximately 173 acres. This reach is 2.1 miles long.

Built Environment

Land Use/Zoning

Tables 5-1 and 5-2 show the land use and zoning designations within this reach.

TABLE 5-1: Land Use LC-1

Land Use	Area	Percent of Total
Conservation Open Space	52.0	30.2
Potential Open Space	12.6	7.3
R 4-10	107.8	62.5

TABLE 5-2: Zoning LC-1

Zoning	Area	Percent of Total
Single-Family Residence Zone	172.4	100

The entire reach within the inventory area is zoned as single-family residential. Land use, taken from the City of Spokane Comprehensive Plan, is shown as 63 percent low-density residential and 37 percent open space. The 69 acres of open space is City-owned parkland.

Built Structures/Impervious Surfaces/Development Intensity

Approximately 92 percent of the inventory area is vegetated. The 14 acres (7.8 percent) of impervious cover is mostly associated with SR-195. Buildings within the inventory area are single-family residences, covering 2.3 acres or 1.4 percent of the reach. The majority of the buildings are outside of the meander belt, within a 200-foot meander belt buffer.

Transportation

The most significant transportation feature within the reach is SR-195, a four-lane divided highway located on the west side of the valley. The Hatch Road Bridge and the access bridge and road to The Creek at Qualchan Golf Course are located in this reach. The transportation facilities have impacted the channel migration zone.

Utilities

A sewer line serving Bridlewood and the residences east of Hatch Road is located along this reach and crosses the creek at Bridlewood. Overhead power and natural gas utilities also serve the Bridlewood development. A natural gas line crosses the creek near the sewer line and an underground power line crosses beneath the creek near the golf course bridge.

Shoreline Modifications

Three sections of bank armoring are present. One near RM 6.0 is associated with the golf course bridge. A second area, approximately 200-feet long, provides erosion protection for SR-195 near RM 7.2. A bio-engineered bank stabilization structure associated with protecting the residential development at the top of the east bank bluff near RM 7.7 is the third area.

Near the Bridlewood development an area of debris along the shore was noted during the field work. In general, the Bridlewood development has retained a natural shoreline by establishing and maintaining a vegetated buffer area alongside the creek.

Environmental

According to Ecology's database, there are no locations of concern within the reach. There are no water quality impairment listings on the 303(d) list.

Shoreline Access and Use

Forty percent of the area is City parkland providing informal access to the creek at many points. Champion Park, a City park with few improvements, is located near the beginning of the reach and provides direct access to the creek. The park is used by mountain bikers and recreational paddlers as an access, and also by birders. The shorelines and adjacent upland areas along this reach are used by residents of the Latah Valley and of Spokane's South Hill. There are informal trails on the slopes between the South Hill and Latah Creek used by hikers and bikers. Erosion of the hillsides from the informal trail system has been and is a concern. There are limited opportunities for development along the shoreline; expansion and widening of the SR-195 corridor is anticipated through the valley.

Archaeological/Historic Resources

No sites on either the local or state registers or the NRHP are noted within the shoreline jurisdiction. Specific archaeological sites have not been identified in this area.

Natural Environment

Soils

Soils within the reach are mixed but approximately one-quarter are noted as riverwash. Approximately 30 percent of the area is noted as Springdale gravelly loamy sand or Speigle very stony silt loam. These soils have a moderate to high infiltration rate, low runoff potential and are rated as a severe erosion hazard. The remainder of the soils is rated as a slight erosion hazard.

Degraded Areas/Eroding Shorelines

This reach is considered relatively stable. However, down-cutting is evident and exacerbated by confinement by SR-195 to the west, and by steep, erodible bluffs on the east. Erosion along this reach is moderate to severe. The banks along SR-195 are generally armored to reduce erosion. Several of the high bluffs have large scree slopes of unconsolidated sediment at their bases. Most of the scree slopes in this reach supply sediment to the stream each year. A few of these slopes are being re-vegetated.

Vegetation

Within this reach riparian vegetation covers 28 acres (16 percent), with upland vegetation covering 47 acres (27 percent). Eleven vegetation sample sites were established in this reach. The sample plots showed area coverage of only 17 percent native species. Within the riparian zone reed canarygrass is prevalent. Significant native species include coyote willow, Mackenzie willow, and Wood's rose. Significant non-native species include reed canarygrass and common tansy.

Priority Habitats/Wildlife Corridors

A number of sensitive species are thought to be present in this reach. The creek corridor is noted as an important wildlife travel corridor with important wildlife diversity by the WDFW. Habitat areas for both Northwest white-tailed deer and Rocky Mountain elk have been designated in the reach. Trout and other game fish have been noted in past surveys, as have occurrences of river otter. Migration corridors are mostly intact along the riparian and upland areas.

The Spokane Audubon Society has identified Campion Park as habitat for Bullocks oriole, song sparrow, and house wrens and other songbirds. The wooded area across the creek from Bridlewood has been identified as good habitat for migrating birds.

Critical Area

Table 5-3 summarizes the critical area inventory.

TABLE 5-3: Critical Area Inventory LC-1

Critical Area	Description
Wetlands (1)	No non-channel wetlands have been identified in this reach.
Aquifer Recharge	The entire reach is within the 10 year travel time for down-gradient wells (Wellhead Protection Plan) and should be considered an Aquifer Recharge Area. The aquifer(s) have not been well studied in this area.
Fish and Wildlife Conservation (2)	Riparian Habitat Area extends to the outer edge of the 100 year flood plain, the CMZ, or 250-feet past the OWM, whichever is greater. 63 percent of this area is listed as Northwest white-tailed deer Priority Species Habitat and 100 percent as Rocky Mountain Elk Priority Species Habitat.
Geologically Hazardous	Two percent of the area has slopes greater than 30 percent; six percent has highly erodible soils, while 54 percent has other geologic hazards.
Frequently Flooded (3)	21 acres is within the FEMA 100 year flood plain, dispersed through this reach.

Wetlands based on EWU Wetland Survey; City Municipal Code 11.19.2560; 100 year flood plain from FEMA maps.

5.4.1 Ecological Function Characterization – LC-1

Hydrologic

The SCCD PFC survey rates the majority of this reach as *functional at risk*, primarily due to deep incisement, narrow riparian areas, and frequent bank erosion. The lower portion, near the Bridlewood development, is rated as properly functioning. The construction of SR-195, which straightened the channel; bank hardening projects; and meander cutoffs have constrained the channel. This has resulted in lowering of the streambed, channel-widening, severe erosion in some areas, and channel aggradations. The channel is laterally unstable, but the majority of the reach appears to be vertically stable due to areas having a rock channel bottom. The majority of this reach does not contain adequate natural characteristics to absorb or dissipate energy during high flows. Erosion is extensive and evident by large sandy bluffs and vertical banks.

Shoreline Vegetation

Vegetation differences were noted between the east and west banks of the creek within this reach. The east side of the creek has a much more vigorous vegetative community. The west bank has been altered by SR-195. Riprap is present along much of the reach on this side, and the riparian/upland area is limited to a narrow band, with the exception of Champion Park. Many of the bar formations contain young recruitment of cottonwoods and willows. Riprap areas tend to have establishing or well-established woody vegetation. Champion Park provides an excellent upland restoration opportunity. In the southern end of the reach the plant communities approximate what was possibly present in this area prior to human influence. The banks are lower, allowing for dissipation of energy during high flow events and there is a good transition from herbaceous, stream-side vegetation through a shrub zone into the Ponderosa pine upland woodland.

Hyporheic

Hyporheic functions appear to be *functioning normally* in this reach.

Habitat

The reach has been designated as Urban Natural Open Space by the WDFW PHS database through four percent of the reach, and for riparian zones for 57 percent of the reach. This area is listed as habitat for Rocky Mountain elk and American white-tailed deer. Low flows during the summer expose up to 70 percent of the streambed, exposing *sessile* (sitting on stem) aquatic species, reducing their viability. Both the riparian and the east bank provide corridors for movement of wildlife. SR-195 limits wildlife migration to and from the west. Habitat for fish is functioning at a degraded level due to channel incisement, simplification, and poor water quality, including temperature and sediment. Low summer flows further limit the distribution of aquatic species, and exacerbates poor water quality impacts.

5.4.2 Ecological Function Assessment – LC-1

The 2005 SCCD PFC study rated 75 percent of this reach as having *fair ecological function*. The lower portion of the reach, associated with the Bridlewood development is rated as *good for ecological function*.

Of the ecosystem-wide processes and functions identified in the SMA, most are not functioning adequately within this reach.

- Upland habitats outside the shoreline jurisdiction appear to be in good condition and functioning well for forage and migration, but riparian plant species diversity is relatively low, lacking many essential native plant communities.
- Flows are seasonally variable with very low summer flow. Upstream land uses have been altered by forestry and agriculture, and likely increase the degree of flow variability. Along this reach, the floodplain appears to be functioning adequately. Low summer flows and high water temperatures limit the connectivity with other reaches of the creek.
- Shorelines have been altered both by armoring and erosion. However, much of the reach provides an adequate framework for aquatic system functions.
- Large woody debris (LWD) was not observed in this reach in sufficient amounts to create structured habitats.
- Water quality is dependent upon stream flow. During low flow periods, low dissolved oxygen and higher temperatures are the predominant water quality issue.
- During extreme high flood flows, turbidity and suspended sediment generally exceed state water quality standards. Surface runoff introduces pollutants such as sediment, de-icing chemicals, animal wastes, oil and grease, heavy metals, pesticides, and lawn and farm fertilizers to the creek.
- The sediment regime, like much of the rest of the creek, is characterized by very high sediment loads during flood flows resulting in eroding shoreline conditions that hinder establishment of native shoreline vegetation.

5.4.3 Reach Observations – LC-1

Restoration potential is high in this reach, through both conservation and active restoration efforts. Invasive weed control, bank stabilization, and in-stream structure would benefit the reach to varying degrees.

The following opportunities are possible within this reach. Additional restoration opportunities are detailed in the Latah Creek Flood Hazard Plan (SCCD 2000).

- Wooded areas upstream from the Qualchan Golf Course bridge, within the riparian area on the Bridlewood side, provide important habitat and stabilize the bank. Continue protection effects.
- Debris left on Bridlewood bank provides a restoration opportunity.
- Woods south of Bridlewood and across the creek are located in the City-owned Hangman Park. This area has also been identified by the Spokane Audubon Society as an area to protect for migratory birds.
- Eroded slope bank stabilization at RM 7.7. Maintain, improve, enhance by additional planting.
- Provide policies in SMP for utility maintenance.

- Champion Park restoration opportunity provides the potential to plant additional upland vegetation to increase habitat width. This area has been identified by the Spokane Audubon Society as an area to protect for bird habitat.
- Proposed WSDOT SR-195 development includes construction of a new bridge at Hatch Road, and raising the highway.

5.5 Latah Creek: Reach LC-2

Reach LC-2 begins at the upper Qualchan Golf Course Bridge (RM 4.4), and extends to the north end of the golf course (RM 6.0). Within this reach the significant features includes the Qualchan Golf Course, a residential area south of the Bridlewood development, and a short section of SR-195 that constricts a meander in the creek. The inventory area is located within the meander zone and a 200-foot buffer in a land area of approximately 163 acres. The inventory did not include the isolated meander on the west side of SR-195. This reach is 1.6-miles long.

Built Environment

Land Use/Zoning

Tables 5-4 and 5-5 show the land use and zoning designations within this reach.

TABLE 5-4: Land Use LC-2

Land Use	Area	Percent of Total
Conservation Open Space	10.4	6.4
Open Space	109.1	67.1
Potential Open Space	19.0	11.7
R 4-10	24.1	14.8

TABLE 5-5: Zoning LC-2

Zoning	Area	Percent of Total
Single-Family Residence Zone	162.54	100

The Creek at Qualchan Golf Course is the principle man-made land use within this reach.

Built Structures/Impervious Surfaces/Development Intensity

The majority of this reach is vegetated. Approximately 7.6 acres (4.7 percent) of impervious cover is found within a 200-foot meander zone buffer, most of which is associated with SR-195.

Transportation

The most significant transportation feature within the reach is SR-195. The golf course has access roads and paved paths. Three pedestrian bridges cross the creek.

Utilities

A sanitary sewer is located along SR-195 and follows the shoreline through the Bridlewood development. Overhead power is located on the west side of SR-195. A natural gas line is located to the east, outside of the shoreline area but near the top of an eroding slope.

Shoreline Modifications

Development of the golf course altered the shoreline of the creek within this reach. Bank armoring is almost equally divided between bank armoring to protect SR-195, and bank armoring to protect the golf course, totaling 0.6 miles, or 19 percent of the length of the reach. In addition to bank armoring, riparian vegetation has been altered and upland areas were transformed from a natural, forested area of ponderosa pine, into managed grassland.

Environmental

According to Ecology's database, there are no locations of concern within the reach. There are no water quality impairment listings on the 303(d) list.

Shoreline Access and Use

Eighty-four percent of the reach is City parkland most of which is the golf course. There is no formal access to the water's edge within the golf course. No other public access exists. Use within this reach is mostly confined to residents using the golf course and seasonal paddlers floating through.

Archaeological/Historic Resources

No sites on either the local or state registers or the NRHP are noted within the shoreline jurisdiction. Specific archaeological sites have not been identified to our knowledge in this area.

Natural Environment

Soils

Soils within the reach are mixed with approximately 37 percent noted as Springdale gravelly loamy sand having a high infiltration rate, low runoff potential, and are rated as a severe erosion hazard. The remainder of the soil is rated as a slight erosion hazard.

Degraded Areas/Eroding Shorelines

A designated *degraded and erosion area* is identified near the downstream-end of the Qualchan Golf Course. Erosion along this reach is *moderate to severe*, and consists of vertical banks and bluffs. The high banks in this reach have minor slumping. The areas having longitudinal erosion have vertical banks with little vegetation. Several of the high sediment bluffs have large scree slopes of unconsolidated sediment at their bases. Most of the scree slopes in this reach are not in balance with the stream and supply sediment to the stream each year.

Vegetation

Within this reach, riparian vegetation covers 33 acres (20 percent) with upland vegetation covering 51 acres (31 percent). Eleven sample sites were established in this reach. These sample plots showed area coverage of 25 percent native species. Within the riparian zone, reed canarygrass is prevalent. Significant native species include coyote willow, Mackenzie willow, and Wood's rose. Significant non-native species include reed canarygrass, and common tansy.

Priority Habitats/Wildlife Corridors

A number of sensitive species are thought to be present in the reach. Habitat areas for both Northwest white-tailed deer and Rocky Mountain elk have been designated in the reach. Trout and other game fish have been noted in past surveys as have occurrences of river otters. Migration corridors are mostly intact along the riparian areas and open space provided by the golf course.

Critical Areas

Table 5-6 summarizes the critical area inventory.

TABLE 5-6: Critical Area Inventory LC-2

Critical Area	Description
Wetlands (1)	A seasonal marsh covering 0.9 acres has been identified near the north boundary of the golf course.
Aquifer Recharge	The entire reach is within the five year travel time for down-gradient wells (Wellhead Protection Plan) and should be considered an Aquifer Recharge Area. The aquifer(s) have not been well studied in this area.
Fish and Wildlife Conservation (2)	Riparian Habitat Areas extend to the outer edge of the 100 year flood plain, the CMZ, or 250 feet past the OWM, whichever is greater. This area is listed as Northwest white-tailed deer Priority Species Habitat and 75 percent as Rocky Mountain Elk Priority Species Habitat.
Geologically Hazardous	1.4 percent of the area has slopes greater than 30 percent, 10 percent has highly erodible soils, while 54 percent has other geologic hazards.
Frequently Flooded (3)	17 acres is within the FEMA 100 year flood plain, dispersed through this reach.

1. Wetlands based on EWU Wetland Survey.

2. City Municipal Code 11.19.2560

3. 100 year flood plain from FEMA maps.

5.5.1 Ecological Function Characterization – LC-2

Hydrologic

The majority of the reach is entrenched. The construction of SR-195, bank hardening projects, and meander cut-offs have constrained the channel. This has resulted in the lowering of the streambed, channel widening with severe erosion in some areas, and channel aggradation. The channel is laterally unstable, but the majority of the reach appears to be vertically stable due to areas having a rocky channel bottom. This reach does not contain adequate natural characteristics to absorb or dissipate energy during high flows. Erosion is extensive and evident by large sandy bluffs and vertical banks.

Shoreline Vegetation

The riparian vegetation in this reach is discontinuous. The golf course is the major land use in this reach and its development has impacted natural vegetative communities. Riprap has been utilized to protect the banks and little vegetation re-establishment has occurred. In the southern end of this reach, there is a developed flood plain with a well-established community of coyote willow.

Hyporheic

Hyporheic functions appear to be *functioning normally* in this reach.

Habitat

The WDFW has designated areas in this reach as Northwest white-tailed deer and Rocky Mountain Elk Priority Species Habitat. Natural habitat has been disturbed by construction of the golf course. The creek and open space of the golf course allow for a wildlife corridor along the creek. Habitat for fish is functioning at a degraded level due to channel incisement, simplification, and poor water quality, including temperature, DO, and sediment. Low summer flows limit the distribution of aquatic species, and exacerbates poor water quality impacts.

5.5.2 Ecological Function Assessment – LC-2

The 2005 SCCD PFC study rated this reach as *properly functioning* hydrologically, and *poor to fair ecological functioning* for most of its length downstream from the Bridlewood development. It is rated in *good condition* near the Bridlewood development, and adjacent to the residential areas just downstream. Most of the ecosystem-wide processes and functions identified in the SMA are *not functioning adequately* within this reach.

- Upland habitats outside the shoreline jurisdiction appear to be in good condition and functioning well for forage and migration, but riparian plant species diversity is low, lacking many essential native plant communities.
- Flows are seasonally variable with very low summer flow. Land use upstream including forestry and agriculture have likely increased the degree of flow variability. Along this reach, the floodplain appears to be functioning adequately. Low summer flows and high water temperatures limit the connectivity with other reaches of the creek.
- Shorelines have been altered both by armoring and erosion. However, much of the reach provides an adequate framework for the functions of the aquatic system.
- Large woody debris (LWD) was not observed in this reach in sufficient amounts to create structured habitats.
- Water quality is dependent upon stream flow. During low-flow periods, low dissolved oxygen and higher temperatures are the predominant water quality issue. During extreme high-flood flows, turbidity and suspended sediment generally exceed state water quality standards. Surface runoff introduces pollutants such as sediment, de-icing chemicals, animal wastes, oil and grease, heavy metals, pesticides, and lawn and farm fertilizers to the creek. Golf course maintenance might contribute fertilizers, fungicides, and pesticides to the creek. The City Parks Department has implemented measures to reduce the impacts of these materials.
- The sediment regime, like much of the creek, is characterized by very high sediment loads during storm events resulting in poor water quality and bank erosion.

5.5.3 Reach Observations – LC-2

This reach would benefit from protective and restoration measures, to preserve and improve ecological function. Invasive species control is needed throughout the reach to remove non-riparian species (common tansy density is high at lower end of reach); and also to work towards naturally replacing the dominant reed canarygrass.

The following restoration opportunities should be considered:

- Slope stabilization along the eroding bluff on the east bank below the golf course; this may be an opportunity to not stabilize the slope, but instead to allow the creek to naturally widen the valley and re-establish a new meander pattern over time.
- Remove upland invasive species at lower end of reach. Enhance existing wetland to provide additional habitat and energy dissipation.
- Enhance vegetation using natural species along the golf course.

5.6 Latah Creek: Reach LC-3

Reach LC-3 begins at the north side of Qualchan Golf Course (RM 4.4) and extends to the Burlington Northern Railroad Bridge (RM 3.2). This reach is relatively natural though confined along most of its length by SR-195 and a high steep bank to the east. This reach contains the cut-off meander which is the Marshall Creek confluence. [Note: The inventory does not include the land around the cut-off meander.] The inventory area is located within the meander zone and a 200-foot buffer, and is a land area of approximately 110 acres. This reach is 1.2 mile long.

Built Environment

Land Use/Zoning

Tables 5-7 and 5-8 show the land use and zoning designations within this reach.

TABLE 5-7: Land Use LC-3

Land Use	Area	Percent of Total
AG	37.5	33.0
Commercial	3.7	3.3
Conservation Open Space	18.2	16.0
Mini Center	2.1	1.9
Open Space	4.2	3.7
Potential Open Space	18.9	16.6
R 4-10	28.9	25.5

TABLE 5-7: Zoning LC-3

Zoning	Area	Percent of Total
Community Business Zone	3.7	3.4
Neighborhood Retail Zone	2.1	1.9
Single-family Residence Zone	103.5	94.7

The City of Spokane Comprehensive Plan provides the land use designations. The commercial and mini-center land use is located on the west side of SR-195; the mobile home park located near the center of the reach is considered low-density residential. Agricultural use is located at the southern end of the reach. The City-owned High Drive Park is considered open space.

Built Structures/Impervious Surfaces/Development Intensity

The majority of this reach is vegetated. SR-195 covers 11 acres (10 percent), and buildings cover an additional 0.8 acres (0.5 percent). All are located within the meander zone.

Transportation

SR-195 is the major transportation feature within the reach. At the northern end of the reach the Burlington Northern Santa Fe Railroad enters the valley from the Marshall Creek drainage to the east and crosses the creek near RM 3.2. In the southern portion of the reach, a large box culvert under SR-195 hydraulically connects Latah Creek to the cutoff meander, forming the wetland/pond on the west side of SR-195 (RM 4.3). Marshall Creek discharges to this area. Downstream from the mobile home park, a private bridge provides access to a residence and the electrical sub-station located on the east side of the creek.

Utilities

A sanitary sewer is located along SR-195 within the shoreline area. A CSO outfall (#20) draining portions of the South Hill is located on the east shore. Overhead power and natural gas lines are located along portions of SR-195.

Shoreline Modifications

Bank armoring associated with SR-195 at the south end of the reach and with the railroad at the north end of the reach is located along 0.3 miles (16 percent) of the reach length. The railroad crosses SR-195 and is located on fill between SR-195 and the bridge. The bridge has concrete abutments that have modified the shoreline.

Environmental

According to Ecology's database, there is one site listed as a UST, LUST, a hazardous material handler, and a hazardous waste generator.

Shoreline Access and Use

Almost 40 percent of the reach is City parkland, much of which is adjacent to the creek. The shorelines and adjacent upland areas along this reach are used by residents of the Latah Valley and of Spokane's South Hill. Access to the creek and use of the parkland is difficult due to limited parking and highway pull-offs on the west side and the steep slopes on the east side. There are informal trails on the slopes between the South Hill and Latah Creek used by hikers and bikers. Erosion of the hillsides from the informal trail system has been and is a concern. There are limited opportunities for development along the shoreline; expansion and widening of the SR-195 corridor is anticipated through the valley.

Archaeological/Historic Resources

No sites on either the local or state registers or NRHP are noted within the shoreline jurisdiction. Specific archaeological sites have not been identified in this area.

Natural Environment

Soils

Soils within the reach are mixed. Approximately 31 percent are noted as riverwash. Approximately 17 percent of the area is noted as Springdale gravelly loamy sand having a high infiltration rate, low runoff potential, and rated as a severe erosion hazard. The remainder of the soils is rated as a slight erosion hazard.

Degraded Areas/Eroding Shorelines

A designated *degraded and erosion area* was identified near the beginning of the reach on the east bank. Erosion along this reach is *moderate to severe*, and consists of longitudinal vertical banks and sediment bluffs. The higher banks in this reach have minor slumping. The areas of longitudinal erosion have vertical banks with no vegetation. Several of the high sediment bluffs have large scree slopes of unconsolidated sediment at their bases. Most of the scree slopes in this reach are not in balance with the stream and supply sediment to the stream each year.

Vegetation

Within this reach, riparian vegetation covers 20 acres (19 percent), with upland vegetation covering 34 acres (31 percent). Four sample sites were established in this reach. These sample plots showed area coverage of 40 percent native species. Reed canarygrass is prevalent through this reach. Significant native species include coyote willow. Significant non-native species include reed canarygrass.

Priority Habitats/Wildlife Corridors

Migration corridors are largely intact along the non-urbanized riparian corridor. Wildlife corridors along Marshall Creek to the west are disturbed due to SR-195, increasing development west of SR-195 and apparent channelization of Marshall Creek near its confluence with Latah Creek. The WDFW Priority Habitat (PHS) database for Fish and Wildlife Conservation Area Critical Areas identifies 100 percent of this reach as Urban Natural Open Space. The Spokane Audubon Society has identified the east shore upstream of the mobile home park as a nesting area for eastern kingbirds and bank swallows, and the west bank just upstream from the railroad bridge as an area for migratory birds.

Critical Areas

Table 5-9 summarizes the critical area inventory.

TABLE 5-9: Critical Area Inventory LC-3

Critical Area	Description
Wetlands (1)	Approximately 11 acres of wetlands associated with the cut-off meander have been identified by the NWIS and EWU wetland surveys. These wetlands provide natural treatment and some hydraulic storage for flows from Marshall Creek.
Aquifer Recharge	The entire reach is within the five year travel time for down-gradient wells (Wellhead Protection Plan) and should be considered an Aquifer Recharge Area. The aquifer(s) have not been well-studied in this area.
Fish and Wildlife Conservation (2)	Riparian Habitat Areas extend to the outer edge of the 100 year flood plain, the CMZ, or 250 feet past the OWM, whichever is greater.
Geologically Hazardous	Two percent of the area has slopes greater than 30 percent, three percent have highly erodible soils.
Frequently Flooded (3)	17 acres is within the FEMA 100 year flood plain, dispersed through this reach.

1. Wetlands based on EWU Wetland Survey.

2. City Municipal Code 11.19.2560

3. 100 year flood plain from FEMA maps.

5.6.1 Ecological Function Characterization – LC-3

Hydrologic

The majority of this reach is entrenched. The construction of SR-195, which resulted in channel straightening, bank hardening projects, and meander cut-offs, has constrained the channel. This has resulted in the lowering of the streambed, channel widening, which caused severe erosion in some areas, and channel aggradation. The channel is laterally unstable, but the majority of the reach appears to be vertically stable due to areas having a rocky channel bottom. Approximately two-thirds downstream from the beginning of this reach, the creek appears to have reached bedrock. This reach does not contain adequate natural characteristics to absorb or dissipate energy. Erosion is extensive and evidenced by large sandy bluffs and vertical banks.

Shoreline Vegetation

The majority of this reach is constrained between a high sandy bluff and SR-195. Establishment of a vigorous, diverse riparian community is limited by those constraints. A community of coyote willow exists on the west bank approximately mid-way through the reach. The east side of the creek has a sparse upland forest of Ponderosa pine that provides some protection against the erosion of the high bank. The upland portions of the west bank do not contain any significant vegetative stands. Erosion on the west bank is less of a concern because construction of SR-195 provides stabilization, but the lack of vegetation contributes to degraded wildlife habitat along the creek.

Hyporheic

Hyporheic functions are *functioning normally* in this reach due to the general lack of urban encroachment, with the exception of an area that parallels the highway. This section likely has *impaired* hydrologic interchange.

Habitat

The dry west facing slope above the creek provides open habitat. This, combined with the non-urbanized, relatively intact riparian zone provides a continuous corridor for movement of wildlife. This slope has been impacted by informal hiking and biking trails.

Habitat for fish is functioning at a degraded level due to channel incisement/ simplification and poor water quality including temperature, DO, and sediment. Very low summer flows further limit the distribution of aquatic species and exacerbates poor water quality.

5.6.2 Ecological Function Assessment – LC-3

The 2005 SCCD PFC study rated this reach as *functional at risk* with a downward hydrological trend and in *poor to fair ecological function* for 100 percent of its length. Most of the ecological functions identified in the SMA are *not functioning adequately* within this reach.

- Upland habitats outside the shoreline jurisdiction appear to be generally in good shape and functioning relatively well for forage and migration, but riparian plant species diversity is low, lacking many essential native plant communities.
- Flows are seasonally variable with very low summer flow. Altered land uses upstream, including forestry and agriculture, have likely increased the degree of flow variability. Along this reach the floodplain appears to be functioning adequately. Low summer flows and high water temperatures limit connectivity with other reaches of the Creek.
- Shorelines have been altered both by armoring and erosion. The natural meander zone has been cut off within this reach by construction of SR-195. An adequate framework for the functions of the aquatic system exists, but has been substantially altered.
- Large woody debris (LWD) was not observed in this reach in sufficient amounts to create structured habitats.
- Water quality is dependent upon stream flow. During low flow periods, low dissolved oxygen and higher temperatures are the predominant water quality issue. During extreme high flood flows, turbidity and suspended sediment generally exceed state water quality standards. Surface runoff introduces pollutants such as sediment, de-icing chemicals, animal wastes, oil and grease, heavy metals, pesticides, and lawn and farm fertilizers to the creek.
- The sediment regime, like much of the rest of the creek, is characterized by very high sediment loads during flood flows, resulting in eroding shoreline conditions that hinder establishment of native shoreline vegetation.

5.6.3 Reach Observations – LC-3

This reach would benefit from protective and restoration measures to preserve and improve the ecological function. Invasive species control is needed throughout the reach to remove non-riparian species and also to work toward naturally replacing the dominant reed canarygrass.

Partial restoration of the floodplain may be possible at a remnant floodplain terrace, now isolated from high flows by incisement. This area is in the vicinity of the unstable sand bluff described above. Reconnection of the mainstream Latah Creek to the large meander cut off by the construction of SR-195 could benefit the proper ecological function of Latah Creek.

The following opportunities are present in this reach:

- Consider purchase of properties within the meander zone to avoid the need and costs for future bank stabilization. Proposed WSDOT SR-195 projects include a major interchange at Marshall Creek that includes access roads within the meander zone.
- Area of erosion at RM 4.0 on east bank. Consider bio-engineering techniques to stabilize area to protect adjacent structures.
- Restoration/re-vegetation using native species on west bank at RM 4.0. This is an area identified as a nesting area for songbirds by the Audubon Society.
- Partial floodplain restoration; increase vegetation on west bank at RM 4.0.
- Reconnection of the cut-off meander and re-establishing a more natural connection to Marshall Creek could help stabilize other portions of Latah Creek, and also provide a potential wildlife corridor between Latah and Marshall Creeks.
- Proposed WSDOT SR-195 projects include a major interchange at Marshall Creek

5.7 Latah Creek: Reach LC-4

Reach LC-4 begins at the Burlington Northern Railroad Bridge (RM 3.2) and ends at the Inland Empire Way Bridge (RM 1.9). Within this reach, significant features include the Burlington Northern Railroad grade on the east bank and dispersed residential and commercial structures on the west bank. The land area covered within the meander zone and a 200-foot buffer is the inventory area and is approximately 120 acres. This reach is 1.3 mile long.

Built Environment

Land Use/Zoning

Tables 5-10 and 5-10 show the land use and zoning designations within this reach.

TABLE 5-10: Land Use LC-4

Land Use	Area	Percent of Total
AG	47.2	39.3
Conservation Open Space	31.3	26.0
Mini Center	0.2	0.1
Potential Open Space	31.4	26.2
R 4-10	10.1	8.4

TABLE 5-11: Zoning LC-4

Zoning	Area	Percent Of Total
Neighborhood Retail Zone	0.2	0.1
Single-Family Residence Zone	120.0	99.9

The majority of the reach is zoned single-family residential with open space being the predominate land use. Agricultural use consists of small parcel farming and greenhouses.

Built Structures/Impervious Surfaces/Development Intensity

The majority of this reach is mildly impacted by human influences, most notably the railroad grade on the east bank and riprap and dike protection to protect structures and property on the east bank. About 4.2 acres or 3.5 percent of the area is covered with impervious surface. About half of the impervious area is within the meander belt. Building footprints account for about one percent of the reach. These are mostly residences and out-buildings for small farms and greenhouses.

Transportation

The influence of SR-195 is not significant in this area since it begins to shift away from the shoreline and climb towards the I-90 interchange to the north. The railroad is located along the east side of the creek for the entire reach. The railroad bridge and the Empire Way Bridge border this inventory reach.

Roadways are basically limited to driveways and access roads, with the exception of Inland Empire Way, an arterial that is within the shoreline area at both ends of this reach.

Utilities

A sanitary sewer is located along the shoreline through most of this reach. Two city stormwater outfalls are located at and upstream from the Empire Way Bridge. Power lines from the sub-station cross the creek downstream from the railroad bridge.

Shoreline Modifications

Bank armoring totals 0.3 miles of shoreline (13 percent of the river length). Bank armoring on the east side of the creek stabilizes the terraced hillside where the rail line is located. Armoring on the west side of the creek provides stabilization at various locations to protect structures and property. The railroad grade is located on an outside bend with steep eroding slopes similar to those found in the upper reaches, so it is difficult to determine what impact the railroad grade has had on the function of the creek beyond bank stabilization.

Environmental

According to Ecology's database there are *no locations of concern* within the reach.

Shoreline Access and Use

Access and use within this reach is limited. City park land includes six acres of land accounting for five percent of the total area. There are informal access points, but much of the shoreline is bordered by private or railroad property.

Archaeological/Historic Resources

No sites on either the local or state registers or NRHP have been noted within the shoreline jurisdiction. Specific archaeological sites have not been identified to our knowledge in this area.

Natural Environment

Soils

Soils within the reach are mixed but approximately 40 percent are noted as riverwash. Approximately six percent of the area is noted as Springdale gravelly loamy sand having a high infiltration rate, low runoff potential and are rated as a severe erosion hazard. The remainder of the soils is rated as a slight erosion hazard.

Degraded Areas/Eroding Shorelines

A designated *degraded and erosion area* is identified near the middle of the reach on the east bank downstream of the railroad line. Smaller areas of localized erosion are also present. Erosion along this reach is *moderate to severe*, and consists of longitudinal vertical banks and sediment bluffs. The areas of longitudinal erosion have vertical banks with little vegetation. Several of the high sediment bluffs have large scree slopes of unconsolidated sediment at their bases. Most of the scree slopes in this reach are not in balance with the stream and supply sediment to the stream each year.

Vegetation

Within this reach, riparian vegetation covers 19 acres (16 percent) with upland vegetation covering 37 acres (31 percent). Nine sample sites were established in this reach. These sample plots showed area coverage of 59 percent native species. One plot site had only eight percent coverage by native species. Reed canarygrass is found throughout this reach. Significant native species include coyote willow, Black cottonwood, mallow ninebark, Douglas hawthorn, field horsetail, and Scoulers willow. Significant non-native species include reed canarygrass, orchard grass, and common tansy.

Priority Habitats/Wildlife Corridors

The WDFW Priority Habitat (PHS) database for Fish and Wildlife Conservation Area Critical Areas identifies Urban Natural Open Space as covering 92 percent of the reach by area. The Spokane Audubon Society has identified the area at RM 2.5 on the east bank as a nesting area for black-headed grosbeaks and warbling vireos, among others. This area was also identified by the field work as natural and should be protected. Migration corridors are largely intact and non-urbanized, though degraded by an abundance of non-native species.

Critical Areas

Table 5-12 summarizes the critical area inventory.

TABLE 5-12: Critical Areas Inventory LC-4

Critical Area	Description
Wetlands (1)	2.2 acres of wetlands identified by the NWIS and the EWU wetland survey.
Aquifer Recharge	The entire reach is within the five year travel time for down-gradient wells (Wellhead Protection Plan) and should be considered an Aquifer Recharge Area. The aquifer(s) have not been well studied in this area.
Fish and Wildlife Conservation (2)	Riparian Habitat Areas extend to the outer edge of the 100 year flood plain, the CMZ, or 250 feet past the OWM, whichever is greater.
Geologically Hazardous	Four percent of the area has slopes greater than 30 percent, 0.2 percent have highly erodible soils.
Frequently Flooded (3)	Nine acres is within the FEMA 100 year flood plain, dispersed through this reach.

1. Wetlands based on EWU Wetland Survey.

2. City Municipal Code 11.19.2560

3. 100 year flood plain from FEMA maps.

5.7.1 Ecological Function Characterization – LC-4

Hydrologic

The majority of the reach is entrenched. Bank hardening projects on both sides of the creek and high steep slopes on the east bank have constrained the channel. This has resulted in streambed lowering; channel widening, with severe erosion in some areas; and channel aggradation. This reach does not contain adequate natural characteristics to absorb or dissipate energy. Erosion is extensive and evidenced by large sandy bluffs and vertical banks.

Shoreline Vegetation

The riparian vegetation in this reach is discontinuous, but has several large areas that support vigorous communities. The cottonwood grove on the east bank just south of the railroad trestle was noted as a natural area. Many of the point bar formations contain recruitment of young willows. The west bank of the creek is dominated by small plot agricultural. Much of the native riparian vegetation has been removed. Forested upland and coyote willow communities are found on this side of the creek, but vegetation for the most part is limited to narrow discontinuous bands. The southern portion of the east side of the creek is impacted by the railroad grade. Coyote willow exists within the riprap found at the toe of the slope.

Hyporheic

Hyporheic functions appear to be *functioning normally* in this reach.

Habitat

The dry west-facing slope above the creek provides some open habitat constricted by the railroad grade and the residential properties of the South Hill. The east bank is relatively open, but has some development and limited agricultural use resulting in a discontinuous corridor for wildlife. The riparian zone is relatively intact and provides a continuous corridor for migration of wildlife.

Habitat for fish is functioning at a *degraded level* due to channel incisement/ simplification and poor water quality including temperature, DO, and sediment. Very low summer flows further limit the distribution of aquatic species, and exacerbates poor water quality.

5.7.2 Ecological Function Assessment – LC-4

The 2005 SCCD PFC study rated the majority of this reach as *functional at risk* for 93 percent of its length. The lower segment near the Inland Empire Way Bridge is included in the SCCD reach that is rated as *properly functioning*. The SCCD also rated the reach as in *poor to fair* ecological function for 92 percent of its length, and as *fair to good* for 9.5 percent. The *fair to good* rating is associated with the SCCD reach that contains the Inland Empire Way Bridge. Most of the ecosystem-wide processes and functions identified in the SMA are *not functioning adequately* within this reach.

- Upland habitats outside the shoreline jurisdiction appear to be relatively narrow and function may be limited for forage and migration. Riparian plant-species diversity is relatively low, lacking many essential native plant communities. One upland area at RM 2.6 exhibits a diverse plant community and is considered a good location to protect.
- Flows are seasonally variable with very low summer flow. Land use upstream, including forestry and agriculture, has likely increased the degree of flow variability. Along this reach the floodplain appears to be functioning adequately. Low summer flows and high water temperatures limit connectivity with other reaches of the Creek.
- Shorelines have been altered both by armoring and erosion. The natural meander zone appears to be functioning adequately in this reach except for the upstream bend at RM 3.0 which has been diked to protect residences, SR-195, and Inland Empire Way. An adequate framework for the functions of the aquatic system exists.

- Large woody debris (LWD) was not observed in this reach in sufficient amounts to create structured habitats.
- Water quality is dependent upon stream flow. During low-flow periods, low dissolved oxygen and higher temperatures are the predominant water quality issue. During extreme high-flood flows, turbidity and suspended sediment generally exceed state water quality standards. Surface runoff introduces pollutants such as sediment, de icing chemicals, animal wastes, oil and grease, heavy metals, pesticides, and lawn and farm fertilizers to the creek.
- The sediment regime, like much of the creek, is characterized by very high sediment loads during flood flows, resulting in eroding shoreline conditions that hinder establishment of native shoreline vegetation.

5.7.3 Reach Observations – LC-4

This reach would benefit from protective and restoration measures, to preserve and enhance existing ecological functions. Invasive species control is needed through the reach to improve species diversity. Shoreline improvements including riprap removal and re-vegetation opportunities exist, particularly in the vicinity of the railroad bridge and at RM 2.8. Potential conservation areas were identified between the railroad ROW and the east bank for habitat protection and bank stabilization.

The following opportunities exist within this reach:

- Provide bio-stabilization measures to the east bank upstream from the Inland Empire Way Bridge.
- Remove existing riprap and provide bio-stabilization of west bank at RM 3.0.
- Restore and re-vegetate east bank at RM 2.6.
- Protect the high-quality habitat on the west bank at RM 2.6. Possible purchase of conservation land.
- Check hydraulic capacity of Inland Empire Way and Cherry Street Bridges. Extreme peak-flows during the 1996 flood resulted in the capture of debris.

5.8 Latah Creek: Reach LC-5

Reach LC-5 is located between the Inland Empire Way Bridge (RM 1.9) and the 11th Street Bridge (RM 1.4). This is the Latah Creek Neighborhood residential area. Significant features include low-density residential and commercial uses, the Cherry Street Bridge crossing, and basalt cliffs along the west bank. The land area covered within the meander zone and a 200-foot buffer is the inventory area, and is approximately 54 acres. This reach is 0.5 miles long.

Built Environment

Land Use/Zoning

Tables 5-13 and 5-14 show the land use and zoning designations within this reach.

TABLE 5-13: Land Use LC-5

Land Use	Area	Percent of Total
AG	0.1	0.2
Conservation Open Space	11.0	20.4
R 4-10	42.7	79.4

TABLE 5-14: Zoning LC-5

Zoning	Area	Percent of Total
Single-family Residence Zone	53.8	100

The entire reach is zoned single-family residential. Land use is about 80 percent residential. Most of the area designated as Conservation Open Space is City park land.

Built Structures/Impervious Surfaces/Development Intensity

This reach has been impacted by human influences. Impervious surfaces account for 8.25 acres (15 percent) of the area. Residential and commercial building footprints cover 2.8 acres (five percent) of the reach; about half of these are located within the meander belt. Due to the proximity to downtown Spokane, increased development is anticipated. Most buildings and roadways are located on the east bank; the west bank is composed of a basalt cliff that limits development within the shoreline area.

Transportation

Transportation impacts are limited to the three bridge crossings of which Inland Empire Way and Cherry Street are arterials. The 11th Street Bridge provides access to the downstream High Bridge Park. On the east bank, residential streets generally dead-end at the creek. Informal foot paths parallel portions of the creek, but these are discontinuous and apparently used by the neighborhood for creek access.

Utilities

A sanitary sewer crosses the creek at the Inland Empire Way Bridge and continues along the shoreline to Riverside and Clark Avenue near the confluence with the Spokane River. City storm drain outfalls are located at the end of most of the Latah Neighborhood Streets. A water main is located under the Cherry Street Bridge. Natural gas lines serve the Latah Creek Neighborhood. An unknown pipe, reported as an abandoned water main, is exposed in the creek downstream from the Cherry Street Bridge.

Shoreline Modifications

Bank armoring/dikes exist on the east side of the Creek from the Chestnut Street Bridge south, to just upstream from the Inland Empire Way Bridge, accounting for 0.15 miles of the shoreline (12 percent of the reach length). Based on the field inventory, much of the east bank appears to have been raised to protect structures.

Environmental

Portions of the reach are listed as 'waters of concern' for temperature, dieltran, zinc, and 4,4'-DDE. According to Ecology, there is one site within this reach that handles hazardous materials and generates hazardous waste.

Shoreline Access and Use

Public access is principally through a City park located on the south side of the Creek and the west side of Inland Empire Way. Most of the property on the east side of the Creek is private and most of the shoreline is inaccessible from the west side of the Creek. Informal access is limited to the public rights-of-way and an informal trail that passes through private property. The shoreline area is used by residents and seasonal anglers and paddlers. Residents of the Latah Creek neighborhood have expressed interest in not expanding the existing access points in order to maintain the existing neighborhood character. No negative issues by any user group have been reported during the public comment process.

Archaeological/Historic Resources

No sites on either the local or state registers or the NRHP were noted within the shoreline jurisdiction. Specific archaeological sites have not been identified to our knowledge in this area.

Natural Environment

Soils

Soils within the reach are mixed, but approximately half are noted as marble variant sandy loam, having a moderate infiltration rate and a slight erosion hazard.

Degraded Areas/Eroding Shorelines

Small areas of localized erosion are present, but the reach flows primarily through stable bedrock outcroppings.

Vegetation

Riparian vegetation covers five acres (nine percent), with upland vegetation covering nine acres (18 percent). Three sample sites were established in this reach. These sample plots showed an area coverage of only 20 percent native species, and one plot site had only eight percent coverage by native species. Within the riparian zone, reed canarygrass monocultures are prevalent. Significant native species include Pacific and coyote willows. Significant non-native species include reed canarygrass and common tansy.

Priority Habitats/Wildlife Corridors

The WDFW Priority Habitat (PHS) database for Fish and Wildlife Conservation Area - Critical Areas identifies Urban Natural Open Space covering 96 percent of the reach. Migration corridors within the riparian area are largely intact. Development within the area has impacted wildlife corridors in the upland areas. While not specifically identified by the WDFW, the basalt cliffs on the west bank at Latah Creek Park provide a unique habitat within the Latah Creek valley

Critical Areas

Table 5-15 summarizes the critical area inventory.

TABLE 5-15: Critical Area Inventory LC-5

Critical Area	Description
Wetlands (1)	None identified.
Aquifer Recharge	The entire reach is within the 5 year travel time for down-gradient wells (Wellhead Protection Plan) and should be considered an Aquifer Recharge Area. The aquifer(s) have not been well studied in this area.
Fish and Wildlife Conservation (2)	Riparian Habitat Areas extend to the outer edge of the 100 year flood plain or 130 foot past the OWM, whichever is greater.
Geologically Hazardous	Fourteen percent of the area has slopes greater than 30 percent, 0.2 percent have highly erodible soils.
Frequently Flooded (3)	Nine acres is within the FEMA 100 year flood plain, dispersed through this reach.

1. Wetlands based on EWU Wetland Survey.

2. City Municipal Code 11.19.2560

3. 100 year flood plain from FEMA

5.8.1 Ecological Function Characterization – LC-5

Hydrologic

This reach flows through the Latah Valley Neighborhood where the channel has been straightened and reinforced by riprap to protect property from lateral movement of the stream. Space for a natural floodplain is limited due to urbanization. The area is bedrock-controlled and is vertically stable. Erosion is not a significant problem as rocks and vegetation provide adequate structure to dissipate energy.

Shoreline Vegetation

The steep, basalt bluffs along the left bank prevent the establishment of an extensive riparian community. The right bank does not achieve its potential in some sections due to roads and development. Still, riparian vegetation through this reach is relatively continuous and vigorous where it occurs. Willows and black locust are common, especially where riprap is present to protect the banks from erosion, creating a stable environment for tree establishment.

Hyporheic

Hyporheic functions appear to be *functioning normally*, though are naturally low due to the prevalence of bedrock substrate in this reach.

Habitat

The basalt cliffs on the west bank provide a unique habitat in the Latah Creek valley. The east bank is developed with mostly single-family residences and upland habitat is limited. The riparian zone is relatively intact and provides a continuous corridor for migration of wildlife.

Habitat for fish is *functioning at a moderate level* due to channel simplification, poor cover, and poor water quality including temperature, DO, and sediment. Low summer flows further limit the distribution of aquatic species and exacerbate poor water quality. Migration habitat is *moderate to low* due to the presence of residences and a very limited riparian buffer width.

5.8.2 Ecological Function Assessment – LC-5

The 2005 SCCD PFC study rated this reach as ‘properly functioning’ for 100 percent of its length, and in *fair to good ecological function* for 94 percent of its length.

- Upland habitats outside the shoreline jurisdiction are developed and limit wildlife habitat, forage, and migration opportunities. Riparian plant species diversity is relatively low, lacking many essential native plant communities. The basalt cliffs on the west bank are unique to the valley.
- Flows are extremely variable with very low summer flow. Land use upstream, including forestry and agriculture, have likely increased the degree of flow variability. Along this reach the floodplain is not functioning properly due to the need to protect the Latah Creek Neighborhood from flooding. Low summer flows and high-water temperatures limit the connectivity with other reaches of the Creek.
- Shorelines have been altered mostly by armoring and formal and informal diking. The natural meander zone does not appear to be functioning well in this reach. An adequate framework for the functions of the aquatic system exists, but has been altered.
- Large woody debris (LWD) was not observed in this reach in sufficient amounts to create structured habitats.
- Water quality has been impacted and is noted as a “water of concern” due to activities in this reach. Water quality is dependent upon stream flow. During low flow periods, low dissolved oxygen and higher temperatures are the predominant water quality issue. During extreme high-

LC-5

flood flows, turbidity and suspended sediment generally exceed state water quality standards. Surface runoff introduces pollutants such as sediment, de-icing chemicals, animal wastes, oil and grease, heavy metals, pesticides, and lawn and farm fertilizers to the creek.

- The sediment regime, like much of the rest of the creek, is characterized by very high sediment loads during flood flows resulting in eroding shoreline conditions that hinder establishment of native shoreline vegetation.

5.8.3 Reach Observations – LC-5

This reach would benefit from protective measures to preserve existing function. Invasive species control is needed throughout the reach to provide natural function. Re-vegetation opportunities are plentiful along the east bank.

The following restoration opportunities exist within this reach:

- Re-vegetate dike between Inland Empire Way and Cherry Street Bridges.
- Protect basalt cliff area on west bank that is currently conservation land and is located within the City park system.
- The WDFW reports non-native invasive weeds in this area. Vegetation could be improved by re-seeding and planting native species.

5.9 Latah Creek: Reach LC-6

Reach LC-6 is located between the 11th Street Bridge (RM 1.4) and its confluence with the Spokane River (RM 0.0). This is the High Bridge Park/Peoples Park area. Drainage from Indian Canyon enters Hangman Creek in this reach. The land area covered within the meander zone and a 200-foot buffer was the inventory area, and is approximately 175 acres. This reach is 1.4-miles long.

Built Environment

Land Use/Zoning

Tables 5-16 and 5-17 show the land use and zoning designations within this reach.

TABLE 5-16: Land Use LC-6

Land Use	Area	Percent of Total
Conservation Open Space	123.6	87.0
Open Space	15.6	11.0
R 15+	0.7	0.5
R 4-10	2.1	1.5

TABLE 5-17: Zoning LC-6

Zoning	Area	Percent of Total
Single-family Residence Zone	141.3	99.5
Limited Multifamily Residence Zone (R4)	0.7	0.5

The majority of the reach is zoned single-family residential with a land use of 98 percent Open Space, most of which is City park land.

Built Structures/Impervious Surfaces/Development Intensity

This reach is relatively open and natural but has been impacted by transportation and public utilities. Building footprints account for 0.2 percent of the reach and include a few residences near the southern portion. Impervious surfaces are three percent of the total area within the reach.

Transportation

I-90, the Sunset Highway, and the railroad high bridges are located in the southern portion of the reach. They have minor direct impact on the shoreline. The Marnes Bridge on Riverside Avenue is the first bridge upstream of the confluence. A limited-use gravel utility road is located along the east bank. Both informal and formal footpaths are located along large portions of the creek. Roadways within the reach total 0.6 miles, most of which are gravel roads within High Bridge Park.

Utilities

Sanitary sewer lines are located along both sides of the creek. The sewer main located on the east bank serves the southern part of the Latah Creek Valley and the West Plains. The outfall for CSO #19 is located on the east bank between the high bridges. A storm drain outfall was located during the field work on the west bank just upstream of the I-90 Bridge. According to the City utility maps, at least three

additional storm drain outfalls are located along this reach. An overhead power line crosses the creek near the confluence.

Shoreline Modifications

Twenty-five percent of the shoreline within this reach is armored. The majority of the armoring is associated with the gravel road and sewer main on the east bank between the Marne Bridge and Sunset Highway Bridges. Bank armoring continues on the east bank to almost the 11th Street Bridge.

Environmental

Portions of this reach are listed as *impaired* for pH, temperature, and fecal coliforms according to the State 303(d) listing and dieltran, temperature, 4,4-DDE as a Category 2 “waters of concern”. According to Ecology’s database, there are no locations of environmental concern within the reach.

Shoreline Access and Use

The shorelines along Lower Latah Creek are used by residents of the Latah Valley and residents of the City and the region. High Bridge/Peoples Park provides access to the shorelines and is moderately used by many groups. Public access to the creek and shorelines is essentially unlimited in this reach since almost the entire area is owned by the City and managed as a public park. There appears to be ample space within these park systems to increase use.

Archaeological/Historic Resources

No sites on either the local or state registers or the NRHP were noted within the shoreline jurisdiction. Specific archaeological sites have been identified in this reach. Cultural and archeological resource information may be obtained from the Spokane City-County Historic Preservation Office.

Natural Environment

Soils

Soils within the reach are mixed but approximately 60 percent are noted as marble variant sandy loam which has a moderate infiltration rate and is noted as a slight erosion hazard. Approximately 20 percent of the soils are noted as a severe erosion hazard.

Degraded Areas/Eroding Shorelines

Small areas of localized erosion are present, but the reach flows primarily through stable boulder-cobble substrate, further stabilized with riprap embankments on the east bank through High Bridge Park. An area of erosion is evident near the confluence where a high bluff is actively eroding into the stream

Vegetation

Riparian vegetation covers 12 acres (nine percent), with upland vegetation covering 30 acres (21 percent). Six sample sites were established in this reach. These sample plots showed area coverage of 41 percent native species. Within the riparian zone, reed canarygrass is prevalent. Significant native species include coyote willow, Mackenzie willow, and western virgin’s bower. Significant non-native species include reed canarygrass, Scots thistle, black locust, and common tansy.

Priority Habitats/Wildlife Corridors

The WDFW PHS database for Fish and Wildlife Conservation Area - Critical Areas identifies Urban Natural Open Space covering 99.5 percent of the reach. A Wildlife Heritage Site for peregrine falcons has been identified in the upper end of this reach. Migration corridors are largely intact and non-urbanized, though degraded by an abundance of non-native species, and moderate recreation use throughout. The WDFW reports the confluence area as being *very rich and productive*.

Critical Areas

Table 5-18 summarizes the critical area inventory.

TABLE 5-18: Critical Area Inventory LC-6

Critical Area	Description
Wetlands (1)	No non-channel wetlands identified.
Aquifer Recharge	The lower portion of this reach is within the Aquifer Protection Zone. The entire reach is within the 5 year travel time for down-gradient wells (Wellhead Protection Plan).
Fish and Wildlife Conservation (2)	Riparian Habitat Areas extend to the outer edge of the 100 year flood plain or 130 foot past the OWM, whichever is greater.
Geologically Hazardous	Nine percent of the area has slopes greater than 30 percent, five percent have highly erodible soils.
Frequently Flooded (3)	Twenty-four acres are within the FEMA 100 year flood plain. Much of this is associated with the lower reaches and the confluence with the Spokane River.

1. Wetlands based on EWU Wetland Survey.
2. City Municipal Code 11.19.2560
3. 100 year flood plain from FEMA

5.9.1 Ecological Function Characterization – LC-6

Hydrologic

This reach flows through High Bridge Park where the channel has been straightened and reinforced by riprap to protect the east bank from lateral movement of the stream; consequently, it does not have good access to the floodplain. The downstream area is a lower gradient and of smaller substrate, but vertically stable. Erosion is not a problem in the majority of this reach as rocks, riprap, and vegetation provide adequate structure to dissipate energy, though a significant source of fine sediments was noted at a west-bank eroding the bluff near the confluence.

Shoreline Vegetation

Riparian vegetation through this reach is relatively continuous and vigorous where it occurs, but is limited somewhat by the presence of riprap and physical maintenance along the pipeline ROW, and through High Bridge Park. Willows and black locust are common, especially where riprap creates a stable environment for tree establishment.

Hyporheic

Hyporheic functions appear to be *functioning normally*.

Habitat

A heritage site for peregrine falcons is located in this reach. The area is mostly open space and the potential to improve habitat is good, particularly at the lower end of the reach near the confluence.

Habitat for fish is functioning at a *moderate to high* level. In-stream habitat exhibits sufficient complexity, with pools, riffles, and riparian vegetation present, but due to channel simplification, poor cover, and poor water quality including temperature, pH, and sediment, habitat could be improved. Low summer flows further limit the distribution of aquatic species, and exacerbates poor water quality. Migration habitat is *fair to good*, with wide, largely native riparian areas and limited urbanization, but frequent recreational disturbance.

5.9.2 Ecological Function Assessment – LC-6

The 2005 SCCD PFC study rated this reach as ‘properly functioning’ for 100 percent of its length, and in fair to good ecological function for 100 percent of its length.

- Upland habitats appear to be sufficient for forage and migration. Riparian plant species diversity is relatively low, lacking many essential native plant communities
- Flows are extremely variable with very low summer flow. Land use upstream including forestry and agriculture have likely increased the degree of flow variability. Along this reach, the floodplain appears to be functioning adequately within the natural high valley walls and the bank stabilization of the east bank.
- Shorelines have been altered both by armoring and erosion. The natural meander zone appears to be functioning adequately in this reach. An adequate framework for the functions of the aquatic system exists, but has been somewhat altered.
- Large woody debris (LWD) was not observed in this reach in sufficient amounts to create structured habitats.
- Water quality is generally poor with high suspended solids, high temperatures, and the impact of fertilizers and pesticides from upstream activities
- The sediment regime, like much of the creek, is characterized by very high sediment loads during storm events resulting in poor water quality and burying potential spawning gravels. The confluence is a deposition area as evidenced by several gravel bars.

5.9.3 Reach Observations – LC-6

This reach would benefit from protective measures to preserve existing function. Invasive species control would be needed through the reach to provide natural function. Controlling access through the park areas to limit disturbance of migrating wildlife would enhance this area's wildlife function.

The following restoration opportunities exist within this reach:

- Removal of an L-shaped rock or concrete structure from the stream channel under the I-90 Bridge may be beneficial.
- An actively eroding stream bank near the confluence could, through bio-engineering, flow control, and re-vegetation, be stabilized to reduce sediment inputs into the creek and river downstream.
- Removal of non-native invasive species and re-vegetation with native species throughout the reach.
- Increased vegetation of Peoples Park area.

5.10 Inventory Reach Comparison

The preceding sections, attached appendices including the Map Portfolio (Appendix H), as well as the GIS layers, provide the City with a detailed inventory and analysis of the shorelines within the City of Spokane. This information has been compiled in a format that follows the guidelines of WAC 173-26 *Shoreline Master Program Guidelines*. This format and the inventory reach breaks developed are intended to assist the City in the development of environment designations, goals, policies, and regulations required for the Shoreline Master Program.

The information contained in this inventory compiles previous work by others as well as original work generated for this document. Important resources included work prepared by the City of Spokane, Spokane County, Spokane County Conservation District, and many other agencies and work-groups within the Spokane and Latah Creek watersheds.

Table 5-19, *Latah Creek Reach Comparison*, provides a summary of the inventory and characterization of the reaches for Latah Creek.



TABLE 5-19

City of Spokane Shoreline Master Program Update
Inventory and Analysis
November 16, 2006

Latah Creek Reach Comparison Table							
		LC-1	LC-2	LC-3	LC-4	LC-5	LC-6
Area (acres)		173	163	110	120	54	142
Built Environment							
Land Use-Open Space		37%	85%	36%	52%	20%	98%
Impervious		8%	5%	10%	4%	15%	3%
Transportation Impacts		High	High	High	Moderate	Moderate	Moderate
Utility Impacts		Moderate	Moderate	Moderate	High	High	High
Shoreline Armoring		7%	19%	16%	13%	12%	25%
Environmental	303(d) Listed	None	None	None	None	None	Yes
	Permitted Areas	None	None	1 location	None	1 location	None
Access	Parkland	40%	84%	40%	5%	15%	70%
	Trails	Informal	Golf Course	Limited	Informal/Limited	Informal/Limited	Informal
	Formal Access	1 location	Golf Course	None	None	1 location	None
Natural Environment							
Erosive Soils		30%	37%	6%	6%	0.3%	22%
Vegetation	Riparian	16%	20%	19%	16%	9%	9%
	Upland	27%	31%	31%	31%	18%	21%
	Native	17%	25%	40%	59%	20%	41%
Frequently Flooded		21 acres	17 acres	17 acres	9 acres	9 acres	24 acres
Priority Habitats		Yes	Yes	None	None	None	Yes
Function							
Hydrologic (SCCD-PFC)		Functional at Risk	Properly Functioning	Functional at Risk	Functional at Risk	Properly Functioning	Properly Functioning
Ecological (SCCD Rating)		Fair to Good	Poor to Fair	Poor to Fair	Poor to Fair	Fair to Good	Fair to Good
Vegetation		Adequate	Discontinuous/impacted	Discontinuous/impacted	Discontinuous	Continuous/impacted	Adequate
Hyporheic		Adequate	Adequate	Adequate	Adequate	Adequate	Good
Riparian Habitat		Intact/altered	Disturbed	Intact	Intact	Intact	Intact/altered

6.0 SHORELINE USE ANALYSIS

Determining shoreline land use patterns is an important element of the Shoreline Master Program in order to verify that adequate space is available for future preferred shoreline uses. This shoreline land use analysis includes a discussion of preferred shoreline uses and an evaluation of existing and planned land uses, total acreage available, percentage of occupied and vacant lands, and percentage of public and private properties within the 200-foot SMP jurisdiction along the Spokane River and Latah Creek shorelines. (See Figure 6-1, *Spokane River Land Use Capacity Analysis: Upriver*; Figure 6-2, *Spokane River Land Use Capacity Analysis: Downriver*, and Figure 6-3, *Latah Creek Land Use Capacity Analysis*.)

Preferred shoreline uses are identified in the SMP Guidelines (WAC 173-26-201(2)(d)). Preferred uses are those that are unique to or dependent on a shoreline location. Water-oriented uses include the following, in order of preference:

- Water Dependent – Cannot exist in a location that is not adjacent to water.
- Water Related – Not intrinsically dependent but whose economic viability is dependent upon a waterfront location.
- Water Enjoyment– Recreational or other use that requires public access.

When determining allowable uses or resolving use conflicts, the following criteria should be considered:

- Provide appropriate areas for protection and restoration of ecological functions.
- Provide areas for water-dependent and associated water-related issues.
- Provide areas for water-related and water enjoyment uses that are compatible with ecological protection and restoration objectives.
- Locate single-family residential uses where appropriate and where development can occur without significant impact to ecological functions or displacement of water-dependent uses.
- Limit non-water-oriented uses to those locations where the above-described uses are inappropriate or where they demonstrably contribute to the objectives of the SMA.

Existing and future land uses are contained in the Comprehensive Land Use Plan. Public use includes shoreline access and recreational activities associated with the shoreline. Public uses have been identified at public workshops, from local user groups, and from the Recreation Facility Inventory and User Surveys Report, 2004 prepared for Avista Corporation.

Figure 6-1, Spokane River Land Use Capacity Analysis: Upriver

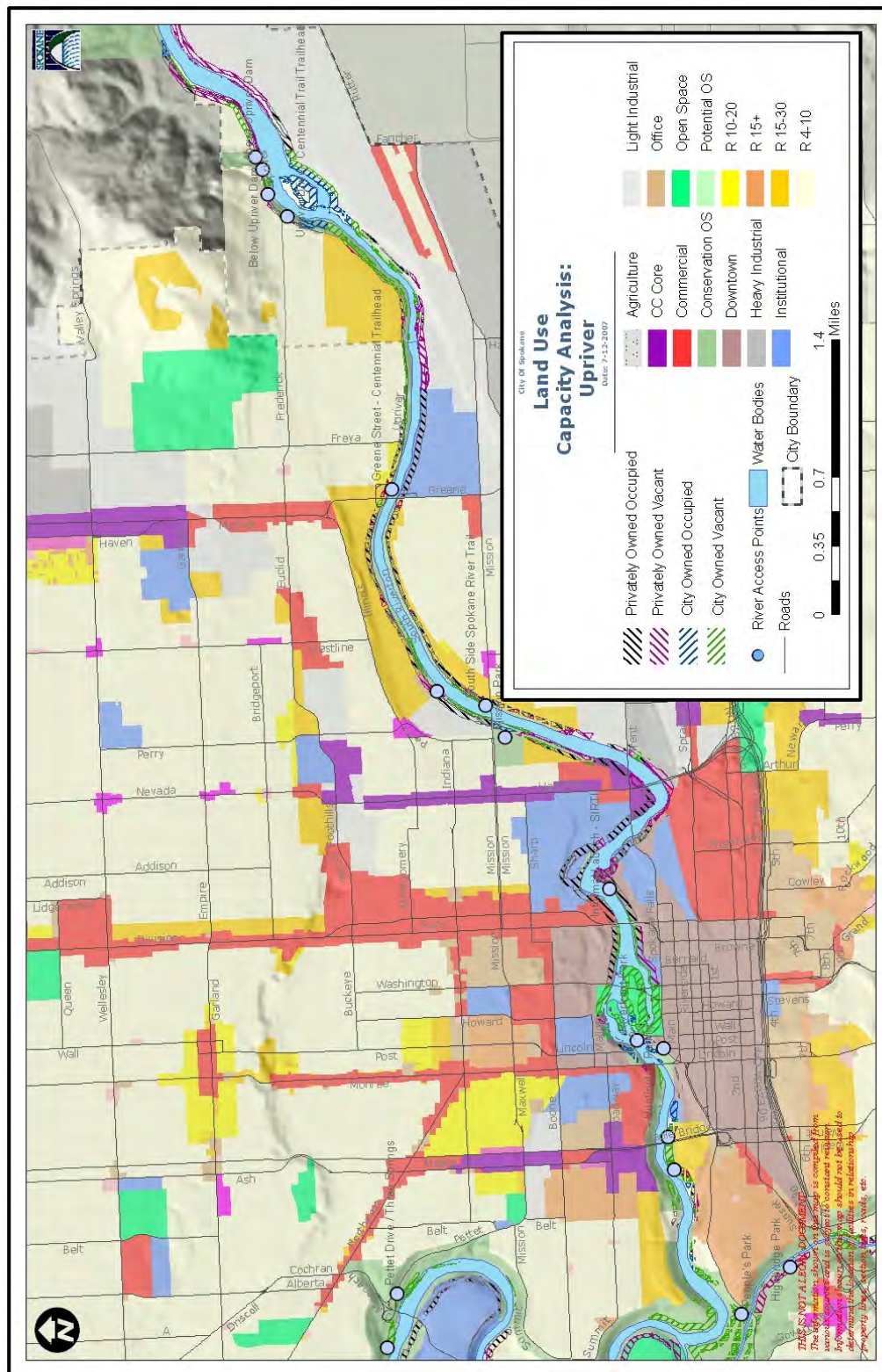
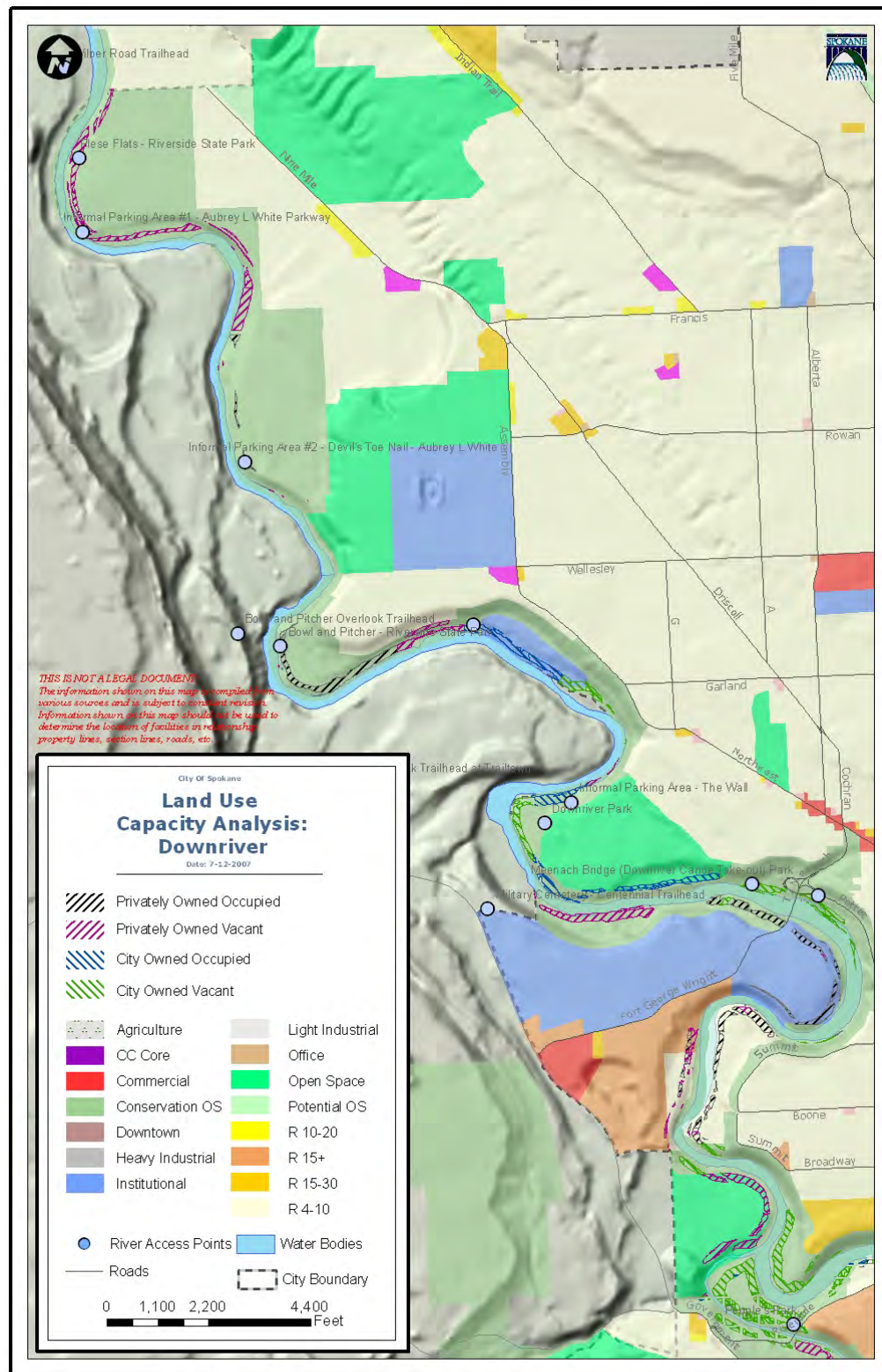


Figure 6-2, Spokane River Land Use Capacity Analysis: Downriver



6.1 Land Use

Land use was determined from the City Comprehensive Land Use Plan, and ownership from Spokane County parcel maps. This information shows that approximately 350 acres (42 percent) of the 850 shoreline acres along the Spokane River, and 195 acres (49 percent) of the 390 acres along Latah Creek are identified as conservation open space, open space, potential open space or agricultural lands, both public and private. Approximately 30 percent of the Spokane River and 32 percent of the Latah Creek shorelines are owned by the City for general recreational use with an additional 22 percent on each shore noted as public right-of-way. In total, the City owns 675 acres of the 1,240 acre shoreline jurisdiction.

Approximately 185 acres (22 percent) of City property along the shorelines have been identified as vacant open space. For Latah Creek, 136 acres or 32 percent is identified as vacant. It is anticipated that the city-owned property will generally remain open space or be developed over time for shoreline-related recreational use. Other open space related to Riverside State Park and the Centennial Trail is anticipated to remain in its current use. The majority of these areas are rated as in fair to good ecological condition and are open for public use. Providing protection and improvement of the ecological functions of publicly owned areas is important to the health of the City's shorelines. Maintaining public access is important to the health and economic viability of the community and region. Conversion of public areas to non-water dependent uses should be avoided.

Private property makes up the remainder of the shoreline area. The largest private parcels along the Spokane River include Spokane Community College, Gonzaga University, Greenwood Memorial Terrace cemetery, The Sisters of the Holy Name, San Souci Mobile Home Park, and Riverside State Park on the Spokane River. Private property identified as vacant accounts for 180 acres (21 percent of the shoreline). Along Latah Creek, vacant private property accounts for 121 acres, or 30 percent of the shoreline.

Table 6-1 identifies shoreline land use and percent of vacant land for parcels along the Spokane River.
Table 6-2 identifies shoreline land use and percent of vacant land for parcels along Latah Creek.

Table 6-1 Spokane River Land Uses

City Owned Properties Spokane River			
Land Use	Occupied	Vacant	Total
Commercial	0.00	0.00	0.00
Conservation OS	25.96	140.49	166.44
Downtown	0.88	0.08	0.97
Heavy Industrial	0.00	0.55	0.55
Institutional	13.43	2.78	16.21
Light Industrial	23.64	5.94	29.58
Open Space	7.08	29.44	36.52
Potential OS	0.00	0.00	0.00
R 15-30 (Residential)	0.03	2.08	2.11
R 4-10	0.00	4.95	4.95
Total Land	71.01	186.31	257.32
Privately Owned Properties			
Land Use	Occupied	Vacant	Total
Agricultural	0.00	0.00	0.00
CC Core	8.07	2.41	10.48
Commercial	4.58	1.40	5.98
Conservation OS	46.66	84.78	131.44
Downtown	20.44	4.21	24.65
Heavy Industrial	0.69	6.38	7.07
Institutional	51.32	6.35	57.67
Light Industrial	12.16	32.64	44.80
Office	0.00	0.00	0.00
Open Space	5.19	13.13	18.32
Potential OS	0.00	0.00	0.00
R 10-20	2.39	0.00	2.39
R 15+	5.76	4.85	10.61
R 15-30	23.17	4.27	27.44
R 4-10	29.52	19.65	49.17
Total Land	209.93	180.08	390.01

Note: Does not include public right-of-ways.

Table 6-2 Latah Creek Land Uses

City Owned Properties Spokane River			
Land Use	Occupied	Vacant	Total
Commercial	0.00	0.00	0.00
Conservation OS	0.32	68.04	68.36
Downtown	0.00	0.00	0.00
Heavy Industrial	0.00	0.00	0.00
Institutional	0.00	0.00	0.00
Light Industrial	0.00	0.00	0.00
Open Space	0.00	55.43	55.43
Potential OS	0.00	10.29	10.29
R 15-30	0.00	0.00	0.00
R 4-10	2.52	2.96	5.48
Total Land	2.84	136.73	139.57
Privately Owned Properties			
Land Use	Occupied	Vacant	Total
Agricultural	19.14	14.95	34.09
CC Core	0.00	0.22	0.22
Commercial	2.29	1.25	3.55
Conservation OS	0.00	30.44	30.44
Downtown	0.00	0.00	0.00
Heavy Industrial	0.00	0.00	0.00
Institutional	0.00	0.00	0.00
Light Industrial	0.00	0.00	0.00
Office	0.00	0.00	0.00
Open Space	0.03	13.90	13.93
Potential Open Space	0.00	15.56	15.56
R 10-20	0.00	0.00	0.00
R 15+	0.00	0.05	0.05
R 15-30	0.00	0.00	0.00
R 4-10	53.27	44.93	98.20
Total Land	74.74	121.30	196.04

Note: Does not include public right-of-ways.

As shown in the tables, there is a good mix of land uses represented along the shorelines. Based on the inventory and public meetings, the areas most likely to develop within the shorelines and adjacent properties include Spokane Community College and the area just upstream, the University District between Mission Street and Division Street, Kendall Yards west of Monroe Street, and potentially The Sisters of the Holy Name property west of Meenach Bridge. Along Latah Creek, much of the area within the 200-foot shoreline jurisdiction is within the channel migration zone. It is suggested that the City prohibit or minimize construction within this zone. The agricultural areas upstream of the Inland Empire Way Bridge have the potential to be developed to higher densities.

6.2 Public Use

Each of the inventory reaches describes available access and gives an overview of current public uses that occur in that area. In general, the Upper Spokane (Upriver Dam to Hamilton Bridge) is used extensively by the public due to Upriver Drive and South Riverton Avenue and the Centennial Trail paralleling the river, providing essentially unlimited public access. In the downtown area (Middle Spokane,) public trails and Riverfront Park provide more intense uses for downtown and the community. The Lower Spokane has a more natural character than the rest of the river reaches in this analysis. Public access is available but more difficult between Monroe Street and Meenach Bridge due to steep banks, private properties and the road system, which generally does not parallel the river. Downstream of Meenach Bridge, Riverside State Park dominates the land use. Aubrey White Parkway parallels the east bank of the river. Public access is good.

The Avista recreational inventory included a survey of uses for a one-year period along Coeur d'Alene Lake and the Spokane River. Within the Spokane River/Nine Mile Reservoir, 395 interviews were conducted. The top reasons noted in the survey for visiting the river were as follows:

Avista Survey

Reasons for Visiting	Percent
Exercise	35
Recreational Opportunities	13
Opportunity to socialize	9
Quality of facilities	8
Opportunity for Solitude	6
Close to home/work	5

Estimated annual use of the river system is 722,000 visits. This includes the river between Post Falls Dam and Nine Mile Dam. By way of comparison, the same survey estimated approximately 800,000 visits at Coeur d'Alene Lake and the river above Post Falls Dam. No comparative information has been gathered for Latah Creek. Eighty-seven percent of those surveyed indicated that the sites were not at all crowded and nine percent said slightly crowded. Seventy-three percent of those surveyed indicated that they were satisfied with the facilities and 15 percent were very satisfied.

The Avista study also included mail surveys of shoreline owners and regional residents. The surveys were directed at use of the entire system, including Coeur d'Alene Lake and the upstream tributaries. While not specifically related to just use of the Spokane River, regional residents identified other uses that

take place on the Spokane River and Latah Creek. The survey indicates the activities residents are looking for along the shorelines.

Avista Survey

Activity	Percent of Respondents Participating
Swimming	64
Picnicking	40
Sightseeing	42
Hiking	38
Bicycling	27
Nature Study/Wildlife Viewing	26
Camping	24
Boat Fishing	30
Bank/Pier Fishing	24
Canoeing/kayaking	16

6.3 Discussion

Land use figures and public ownership percentages indicate that there is ample space for both recreation, and opportunities to protect and improve ecological function along the river systems.

There appears to be space for higher density urban uses in the downtown area and immediately upstream. It is suggested that as these areas are re-developed, attention be paid to providing public access and re-vegetation of the adjacent shorelines. In the Lower Spokane, much of the area is owned by a public entity. Both high intensity and dispersed recreation opportunities are available. Opportunities to protect and improve ecological function are also present

Along Latah Creek, opportunities for recreation are available but could be improved by providing additional facilities, improved safety, and parking off SR-195.

Of the preferred water-oriented uses, hydropower, non-motorized boat launches, riverside trails, and opportunities for dispersed recreation (angling, hiking, and solitude) should be considered. Most of these uses are available, but opportunities exist to improve, extend, and enhance ecological function by careful design and planting of native vegetation.

This shoreline analysis indicates that adequate space is available along the shorelines for the preferred uses identified in the SMP Guidelines. Environmental designations, policies, and regulations should provide appropriate areas for protection and restoration of ecological functions and promote water-oriented access and use.

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Mary Verner	Executive Director – Upper Columbia United Tribes (Currently Mayor of Spokane)
Rene’ Wiley	Park Ranger and Manager – Washington State Parks and Recreation – Riverside State Park
Tammy Williams	Washington State Department of Transportation

8.0 BIBLIOGRAPHY

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- The Hangman (Latah) Creek Watershed Planning Unit, WRIA 56, 2005. The Hangman (Latah) Creek Water Resources Management Plan. Spokane, Washington.

Appendix A

Data Inventory List

SHAPING SPOKANE VOLUME III, APPENDIX D

City of Spokane Shoreline Master Program Update
Existing Data Inventory - Documents
Prepared by URS 5/24/06



Title	Author/Sponsor	Date	River System	Hydrology	Geology	Soils	Biology	Land Use/Culture	Report Obtained	Significant Resource	Notes
Hangman Creek											
Hangman (Latah) Creek Comprehensive Flood Hazard Management Plan, Water Resources Public Data File 00-02	Spokane County Conservation District	2000	Hangman	X	X	X	X	X	Requested from SCCD	yes	Good source of inventory data, most current besides SCCD PFC Inventory and Assessment
WRIA 56 Water Resources Management Plan	WRIA 56 Planning Unit	2005	Hangman	X	X	X	X	X	PDF on file	yes	Good comprehensive data source.
Hangman Creek Restoration Project Watershed Plan	Spokane County Conservation District	1994	Hangman	X	X	X	X		Requested from SCCD	yes	Good source of data, though somewhat dated
Hangman Creek Subwatershed Improvement Project Report, Water Resources Public Data File 00-01	Spokane County Conservation District	2000	Hangman	X		X	X		reviewed at SCCD office	no	Projects studied outside city limits
Latah Creek Instream Flow Study, Final Report	Hardin-Davis Inc/WRIA 56 Planning Unit	2003	Hangman	X			X	X	reviewed at SCCD office	limited	Some limited habitat mapping, focused mainly on analysis of different flows on river system.
Hydrology of the Hangman Creek Watershed (WRIA 56), Washington and Idaho.	Buchanan, John P., and K. Brown/WRIA 56 Planning Unit	2003	Hangman	X		X		X	reviewed at SCCD office	no	Has some landuse information. That information, though is repeated in other documents. Document mainly focuses on water quantity issues and water balance analysis
The Hangman Creek Water Quality Network: A Summary of Sediment Discharge and Continuous Flow Measurements	Spokane County Conservation District	2002	Hangman	X		X			reviewed at SCCD office	limited	Water quality data. Could be useful for determining sediment contribution from upper watershed
Chronicle of Latah (Hangman) Creek: Fisheries & Land Use	Edelen, W. J. and D. Allen/WA Conservation Commission	1998	Hangman				X	X	reviewed at SCCD office	limited	General discussion of fisheries. Could be useful for historical perspective.
Multi-Purpose Storage Assessment for Hangman (Latah) Creek Watershed	Golder Associates Inc/WRIA 56 Planning Unit	2004	Hangman	X					reviewed at SCCD office	no	Not inventory related. Discusses water balance and strategies for storing water to meet instream flow needs.
Hangman (Latah) Creek Water Quality Monitoring Report, Water Resources Public Data File 99-01	Spokane County Conservation District	1999	Hangman	X					reviewed at SCCD office	limited	Water quality data. Could be useful for determining sediment contribution from upper watershed
Geology of the Hangman (Latah) Creek Flood Hazard Area	Hamilton, Michael M., D. F. Stradling, R.E. Derkey,	2001	Hangman		X				reviewed at SCCD office	no	Good source for geology. Much of this information is also presented in Flood Hazard Management Plan
Biological assessment of Hangman (Latah) Creek Watershed	Celto, E., L.S. Fore, and M. Cather/WA Conservation Commission	1998	Hangman				X		reviewed at SCCD office	no	Macroinvertebrate sampling and analysis to determine biological response to human disturbance. Investigates stream bed, not shoreline/riparian. Detail beyond scope of inventory
Technical Memorandum on Reforestation Alternative	Golder Associates Inc/WRIA 56 Planning Unit	2004	Hangman				X		Appendix to WRIA 56 Plan	no	Information related to water balance and increasing water storage capacity of watershed.
Methodology for the development of 2010 and 2020 forecast; Residential Land Use in Spokane County Transportation Planning	Spokane Regional Transportation Council	1997	Hangman					X	Not Reviewed	no	Relevant information provided in WRIA 56 Watershed Management Plan
Hangman Creek post-best management practices implementation study	Fortis, B. and M. Hartz/Idaho Department of Health and Welfare	1991	Hangman							NA	Outside city limits,, not relevant to classification of basin characteristics.
Preliminary investigation of the water resources of the Hangman Creek drainage basin	Ko, C.A., Mueller, A.C., Crosby, J.W., and J.F. Osborn/Washington State University	1974	Hangman							NA	Date of report indicates data not relevant to current inventory.
Year end report 2001-2002 implement fisheries enhancement on the Coeur d'Alene Indian Reservation: Hangman Creek. BPA Project #2001-032-00	Peters, R.L., B. Kinkead, and M. Stanger	2003	Hangman							NA	Outside city limits,, not relevant to classification of basin characteristics.

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Title	Author/Sponsor	Date	River System	Hydrology	Geology	Soils	Biology	Land Use/Culture	Report Obtained	Significant Resource	Notes
Spokane River											
Spokane River Hydroelectric Project Draft Environmental Assessment	Avista/FERC	2005	Spokane	X	X	X	X	X	PDF on file	yes	Comprehensive info on river. Upriver Dam not part of relicensing.
License Amendment, Upriver Project No. 3074	FERC	1988	Spokane	X	X	X	X	X	Selected Portions	limited	Limited information. Some historic vegetation information
Draft WRIA 55 & 57 Watershed Management Plan	WRIA 55/57 Planning Unit	2005	Spokane	X			X	X	PDF on file	yes	Water quantity only element addressed. Looks at instream flow models and effects on aquatic biota, resource uses, recreation uses, etc.
Spokane River instream flow recommendations	WA Dept. Fish and Wildlife, Idaho Dept. of Fish and Game, Spokane County Utilities, and WA DOE	2004	Spokane	X			X	X	PDF on file	limited	Analysis document on effects of flow in Spokane River system, inventory related information also contained in other documents.
The hydraulic connection between the Spokane River and the Spokane Aquifer: Gaining and losing reaches of the Spokane River from the state line, Idaho to Spokane, Washington.	Gearhardt, C./Eastern Washington University	2001	Spokane	X	X				Summary .doc on file	yes (basin wide process)	River Reaches studied are between WA-ID border and Plantes Ferry Park
Spokane River/Aquifer Interaction Project Results, May-November 1999	DOE	1999	Spokane	X	X				PDF on file	limited	Significant conclusions also presented in other documents
Surface-water/ground-water interaction of the Spokane River and the Spokane Valley/Rathdrum Prairie aquifer, ID and WA U.S. Geological Survey Water-Resources Investigations Report 03-4239	Caldwell, R.R. and Bowers, C.L./US Geological Survey	2003	Spokane	X	X				PDF on file	limited	Significant conclusions also presented in other documents
Instream Flow and Fish Habitat Assessment	Avista	2004	Spokane	X			X		PDF on file	limited	Some limited habitat inventory
Concentrations of Selected Trace Elements in Fish Tissue and Streambed Sediment in the Clark Fork-Pend Oreille and Spokane River Basins, Washington, Idaho, and Montana	USGS	1998	Spokane	X			X		PDF on file	yes	Two of sixteen sample sites with in Spokane River Basin. Related tissue and sediment concentrations to land use activities.
Summary of Information on Synthetic Organic Compounds and Trace Elements in Tissue of Aquatic Biota, Clark Fork-Pend Oreille and Spokane River Basins, Montana, Idaho, and Washington, 1974-1976	USGS	1996	Spokane	X			X		PDF on file	yes	Six of sixteen sample locations in the Spokane River Basin.
Cultural Resources Overview for the Spokane River HED Project (Inventory work has carried over into 2004 due to field conditions, which is an adjustment to the planned schedule noted in the Overview)	Avista	2004	Spokane				X	X	PDF on file	yes	Comprehensive look at cultural resources and review historic flora and fauna
1992 Angler Survey for the Spokane River, Washington	Johnson E. E., R.W. Smith and D.K. Selle/Washington Water Power Co.	1992	Spokane				X	X		no	Age of data limits use in inventory of current conditions.
Spokane River PCB Sediment Contamination Project - How will PCBs in Sediments Behind Upriver Dam be Addressed	Ecology	2005	Spokane	X					PDF on file	yes	Fact sheet with all pertinent information, including locations of contaminated sediments.
Assessment of changes in water quality in the Spokane River between Riversied State Park and the Washington-Idaho border. Pub No. 04-03-007\	Hallock, D./ WA DOE	2004	Spokane	X					PDF on file	limited	detail of water quality info beyond scope of inventory
Probable maximum flood study for the Post Falls, Nine Mile and Long Lake Hydroelectric Developments	Ebasco Services Inc/Avista	1987	Spokane	X						no	More recent data adequately addressed need
Watershed approach to water quality management needs assessment for the Spokane Water Quality Management Area (WRIA 54-57)	Knight, D.T./WA DOE	2004	Spokane	X						no	not inventory related
Phase 1 Report, Water Quality Data Compilation Spokane River Licensing Project	Avista	2003	Spokane	X					PDF on file	no	Assessment of existing data

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Title	Author/Sponsor	Date	River System	Hydrology	Geology	Soils	Biology	Land Use/Culture	Report Obtained	Significant Resource	Notes
Surficial geology along the Spokane River, Washington and its relationship to the metal content of sediments (Idaho-Washington state line to Hangman creek confluence). Open-File Report 02-126	United States Geological Survey	2002	Spokane		x				PDF on file	yes	Very detailed geology for the Spokane River from east city limits to Hangman confluence
Report on Coeur d'Alene Lake and Spokane River Sediment Routing	Avista	2005	Spokane			x			PDF on file	limited	Area within Shoreline study are covered in 2 pages
Phase 1 Report, Spokane River Project Erosion Reconnaissance	Avista	2003	Spokane			x			PDF on file	no	Does not address study area
Final Phase 2 Erosion Assessment Report	Avista	2004	Spokane			x			PDF on file	no	Does not address study area
Nine Mile HED Sediment Diversion Project Final Report	Avista	1999	Spokane			x				no	Does not address study area
An Overview of Aquatic Habitat and Fish Related Impacts of the Spokane River HED Project in WA	Avista	2004	Spokane				x		PDF on File		Focuses on mitigation of impacts
Final Wetland and Riparian Habitat Mapping and Assessment Report	Avista	2004	Spokane				x		PDF on file	yes	Middle portion of study are not covered
Spokane River Hydroelectric Project Sensitive, Threatened, and Endangered Plant Survey	Avista	2003	Spokane				x		PDF on file	yes	Covers shorelines affected by fluctuating water levels caused by HED's
Rainbow Trout Spawning Survey, 2003	Avista	2003	Spokane				x		PDF on file	yes	Middle portion of study area not covered
Terrestrial Resource: Summary Description of Existing Conditions and Identification of Data Gaps based on Currently Available Information Sources	Avista	2003	Spokane				x		PDF on file	yes	Identifies studies that look at specific species for specific reaches
An overview of aquatic habitat and fish related impacts of the Spokane River Hydroelectric Project in Washington	Avista Corporation and Washington Department of Fish and Wildlife	2004	Spokane				x		PDF on file	limited	Focuses of HED's effects on fisheries. Does not inventory conditions.
Fishery assessment of the upper Spokane River	Bailey, G. C. and J. Saltes/State of Washington, Water Research Center, Washington State University	1982	Spokane				x			no	Age of data limits use in inventory of current conditions.
An evaluation of the fisheries potential of the lower Spokane River: Monroe Street Dam to Nine Mile Falls Dam	Kliest, T./Washington Water Power Co.	1987	Spokane				x			no	Age of data limits use in inventory of current conditions.
Ecological Indicators of Water Quality in the Spokane River, Idaho and Washington	MacCoy, Dorene E.; Maret, Terry R./US Geological Survey	2003	Spokane				x		PDF on file	limited	One sampling site within study area. Useful background for basin wide characteristics
PCB's in Tissue of Fish from the Spokane River, Washington, 1999.	USGS	1999	Spokane				x		PDF on file	yes	USGS Fact sheet. Concise, useful information.
Wildlife Resource Enhancement and Protection for the Spokane River Project	Washington Water Power	1990	Spokane				x		Hardcopy	limited	Good habitat inventory from sewage plant to city limit. Age of data could limit use.
Final Recreation Facility Inventory and User Survey Report	Avista	2004	Spokane					x	PDF on file	yes	Detailed inventory with site descriptions containing Lat/Lon
Aesthetics Study Report, Spokane River Project, FERC No. 2545	Avista	2003	Spokane					x	PDF on file	no	No inventory info.
Archaeology of the Middle Spokane River Valley: Investigations Along the Spokane Centennial Trail	Center for Northwest Anthropology, WSU	1991	Spokane					x	Hardcopy	yes	Ethnographic and Geonomic Site Locations & Descriptions
A Cultural Resource Survey of the Spokane River Centennial Trail: Phase I - Spokane to the WA/ID Border	Center for Northwest Anthropology, WSU	1989	Spokane					x	Hardcopy	yes	Ethnographic and Geonomic Site Locations & Descriptions
Aerial Photography Inventory TRWG	Avista	2003	Spokane						PDF on file	yes	Good source for historical research
Vegetation Map Inventory TRWG	Avista	2003	Spokane						PDF on file	yes	Good source for historical research
Stakeholder Assessment Report	Avista	2000	Spokane						PDF on file	no	Tells who's interested and why in Spokane River issues
Preliminary Environmental Narrative-Spokane River Centennial Trail/Idaho Centennial Trail	Washington State Parks/Kootenai County, ID	1988	Spokane						Hardcopy	no	SEPA Checklist

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Title	Author/Sponsor	Date	River System	Hydrology	Geology	Soils	Biology	Land Use/Culture	Report Obtained	Significant Resource	Notes
Spokane River HED Current Operations Water Quality Report	Avista	2005	Spokane							NA	Use 303d listing for water quality
Rainbow Trout Radio-Tracking Survey 2004 Final Report	Avista	2004	Spokane							NA	N/A
Report on Temperature Analysis for Spokane River Recreation PM&E	Avista	2004	Spokane							NA	N/A
Final Entrainment Evaluation for the Spokane River HED Project	Avista	2004	Spokane							NA	N/A
Upper Spokane River Rainbow Trout Spawning and Fry Emergence Protection Plan	Avista	2004	Spokane							NA	N/A
Phase 2, Spokane River Water Temperature Report	Avista	2004	Spokane							NA	N/A
Water Budget and Identification of Beneficial Uses	Avista	2003	Spokane							NA	N/A
1997-1999 Upper Spokane River Rainbow Trout Spawning & Fry Emergence Study	Avista	2000	Spokane							NA	N/A
Ramping Rate Evaluation, Spokane River Hydroelectric Project. Doc.No. 2004-0513	Avista, Parametrix, Washington Department of Fish and Wildlife, and Idaho Department of Fish and Game.. Avista	2004	Spokane							NA	N/A
Spokane River water quality monitoring program annual data(April 2001-March 2002) and final monitoring report (April 1999-March 2002)	CH2M HILL/Avista Utilities	2002	Spokane							NA	N/A
Results of sampling to verify 303(d) metals listings for selected Washington State Rivers and creeks Pub No. 02-03-039	Johnson, A. and S. Golding	2002	Spokane							NA	N/A
Environmental improvements on the Spokane River	WA DOE	2004	Spokane							NA	N/A
Spokane River & Hangman Creek											
Spokane Subbasin Plan	NW Habitat Institute		Spokane/ Hangman	x			x		PDF on file	yes	Good maps and some restoration project information
Spokane County Proper Functioning Condition Stream Inventory and Assessment	SCCD	2005	Spokane/ Hangman	x			x		PDF on file	yes	
Streamflow trends in the Spokane River and tributaries, Spokane Valley/Rathdrum Prairie, ID and WA: US Geological Survey Scientific Investigations Report 2005-5005	Hortness, J.E. and Covert, J.J./US Geological Survey	2005	Spokane/ Hangman	x					PDF on file	no	Information found in other sources
Geology and Earth Resources Map	Washington State Department of Natural Resources	1998	Spokane/ Hangman		x					limited	Utilize with USGS Lithology information
Soil Survey Spokane County Washington	Soil Conservation Service	1968	Spokane/ Hangman			x			Hardcopy of file	yes	NRCS Soil Survey
State of Washington natural heritage plan	Washington State Department of Natural Resources	1987	Spokane/ Hangman				x			yes	Utilizing supporting documentation with GIS data.
Priority habitats and species database: Data compilation for the Intermountain Province.	Washington Department of Fish and Wildlife	2003	Spokane/ Hangman				x			yes	Utilizing supporting documentation with GIS data.
An assessment of outdoor recreation in Washington State: A state comprehensive outdoor recreation planning document 2002-2007	Interagency Committee for Outdoor Recreation	2002	Spokane/ Hangman					x		-	not located

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Title	Author/Sponsor	Date	River System	Hydrology	Geology	Soils	Biology	Land Use/Culture	Report Obtained	Significant Resource	Notes
Washington Scenic river assessment	WA Parks and Recreation Commission	1988	Spokane/ Hangman					x		-	not located
Magnitude and Frequency of Floods in Washington, US Geological Survey Water-Resources Investigations Report 97-4277	U.S. Geological Survey	1998	Spokane/ Hangman							NA	N/A
Refining 1970's land-use data with 1990 population data to indicate new residential development:US Geological Survey Water-Resources Investigations Report 94-4250	Hitt, K.J./US Geological Survey	1994	Spokane/ Hangman							NA	N/A

Revision Data: 5/4/06

Bibliography's Consulted

1. USGS Compilation of Geologic, Hydrologic, and Ground-Water Flow Modeling Information for the Spokane Valley Rathdrum Prairie Aquifer
2. SPOKANE RIVER HYDROELECTRIC PROJECT FERC No. 2545 Application for New License Major Project—Existing Dam VOLUME II Applicant-Prepared Preliminary Draft Environmental Assessment
3. Hangman Creek Watershed Assessment
4. Spokane County Shorelines Inventory and Assessment

City of Spokane Shoreline Master Program Update

Existing GIS Layer Master List

June 23, 2006

Layer Name	Agency or steward of data	Description of Layer	Geographic Extent	Metadata (Y or N)
Geologic Map	USGS	Digital geologic map of Spokane County and vicinity	Spokane County, WA	
303d04	WADOE	Washington 2004 303d list	State of WA	Y (on-line)
DOEpermitsites	WADOE	Washington DOE permitted facilities	State of WA	Y (on-line)
Dairy	WADOE	Washington permitted Dairy facilities	State of WA	Y (on-line)
mas.tar	USGS	Mineral resource locations	All western states excluding Hawaii	Y
mils.e00.tar	USGS	Mining Information Locator System	All western states excluding Hawaii	Y
airports.shp	City of Spokane	City airport locations	City of Spokane	Y-Limited
bl_p.shp	City of Spokane	Building roofprints (buildings over 100sq ft.	City of Spokane	Y-Limited
cities_p.shp	City of Spokane	City limits	City of Spokane	Y-Limited
hy_a.shp	City of Spokane	Surface water features (arcs)	City of Spokane	Y-Limited
hy_p.shp	City of Spokane	Surface water features (polys)	City of Spokane	Y-Limited
lup_p.shp	City of Spokane	Land use plan	City of Spokane	Y-Limited
parcels.shp	City of Spokane	Spokane County Tax Assessor Parcel Info.	City of Spokane	Y-Limited
pk_p.shp	City of Spokane	City of Spokane parks	City of Spokane	Y-Limited
rr_a.shp	City of Spokane	Railroad centerlines	City of Spokane	Y-Limited
st_full.shp	City of Spokane	Centerline of streets	City of Spokane	Y-Limited
topo88_a.shp	City of Spokane	2 ft topographic contour	City of Spokane	Y-Limited
zoning_p.shp	City of Spokane	Zoning Boundaries	City of Spokane	Y-Limited
EPA Regulated Facilities	USEPA	EPA regulated facilities	Spokane County, WA	on-line
cdawet-m.shp	Avista	Wetlands mapped along the Spokane River corridor	Spokane River from Coeur	Y-Limited
Centennial_trail.shp	Avista	Location of centennial trail	Spokane River from Coeur	Y-Limited
contour100ft.shp	Avista	100 foot contours for Spokane and vicinity	Spokane County	Y-Limited
heds_approx.shp	Avista	Hydro-electric Dam approximate location	NE Washington	Y-Limited

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Layer Name	Agency or steward of data	Description of Layer	Geographic Extent	Metadata (Y or N)
P-2545, Monroe Street Upper Falls HED Proposed project Boun.shp	Avista	Monroe Street Upper Falls HED Proposed project Boundary	Spokane, WA	Y-Limited
P-2545, Nine Mile Falls HED Proposed Project Boundary.shp	Avista	Nine Mile Falls HED Proposed Project Boundary	Spokane, WA	Y-Limited
Post_Street_Substation.shp	Avista	Post Street Substation location	Spokane, WA	Y-Limited
Recreation_Sites_092105.shp	Avista	Point locations of recreation sites inventoried in 2005	Spokane River from Coeur	Y-Limited
wa_gnis.shp	Avista	Washington GNIS database information	Selected portions of WA and ID.	Y-Limited
Waterbodies.shp	Avista	Shorelines of waterbodies from the National hydrography dataset.	Selected portions of WA and ID.	Y-Limited
erosion_SpoR_Hang.shp	SCCD	Areas of shoreline erosion	Spokane River and Latah Creek	N
Devel_impacts_SpoHang.shp	SCCD	Development impacts to shoreline	Spokane River and Latah Creek	N
ecological_cond_SpoHang.shp	SCCD	Ecological condition of shoreline areas		N
HQA_Spo_Hang.shp	SCCD	High Quality Areas		N
PFC_reach_ratings_Hangman.shp	SCCD	PFC ratings for riparian areas.	Latah Creek	N
PFC_reach_ratings_SpoR.shp	SCCD	PFC ratings for riparian areas.	Spokane River	N
restoration_pot_SpoHang.shp	SCCD	Restoration potential	Spokane River and Latah Creek	N
aqbas.shp	City of Spokane	Spokane Rathdrum Aquifer system	City of Spokane	Y-Limited
AvistaTiles.shp	City of Spokane	Avista orthophoto tiles	City of Spokane	Y-Limited
city_6in.sid	City of Spokane	6 inch resolution black and white orthophoto	City of Spokane	Y
critarea_p.shp	City of Spokane	Critical areas within the city	City of Spokane	N
demgrd	City of Spokane	10 ft digital elevation model corresponding to the 2002 Avista	City of Spokane	Y
dnrhy_p.shp	WA DNR	Water body boundaries generated from township tiles	City of Spokane Urban Growth	Y
dnrhybuf_p.shp	WA DNR	DNR Stream type buffers	City of Spokane	Y
DOEPoints.shp	WADOE	Point locations of potentially contaminated sites	City of Spokane	N
ewuwet_p_p.shp	City of Spokane	EWU Folsom-Quinn wetlands	Spokane County	Y-Limited
geohaz.shp	City of Spokane	Geological hazards	City of Spokane	N
histdist.shp	City of Spokane	historic districts	City of Spokane	Y-Limited
hy_p.shp	City of Spokane	Polygon reference for natural water features	City of spokane	Y-Limited

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Layer Name	Agency or steward of data	Description of Layer	Geographic Extent	Metadata (Y or N)
severe.shp	City of Spokane	Severe erosion hazards	City of Spokane	Y
shorelines_cos.shp	City of Spokane	City of Spokane Shorelines master program 1982	City of Spokane	Y-Limited
shorelines_p.shp	City of Spokane	Shoreline management areas	City of Spokane	Y
slope.shp	City of Spokane	Percent slope classifications	City of Spokane	Y
soils_p.shp	NRCS	Delineated soil types from 1968 Spokane County soil survey.	Spokane County	Y
spkq3.shp	FEMA	FEMA Q3 Flood Zones	Spokane County	Y
topo_a.shp	City of Spokane	Topographic data compiled from 1"=500' aerial photos	City of Spokane	Y
uga.shp	City of Spokane	Urban Growth Areas	Spokane County	Y
wetlands.shp	City of Spokane	Wetlands	Spokane County	N
wnhp_curr_0905.shp	WA DNR	Current Wa National Heritage Program data showing special	State of WA	N
wnhp_hist_0905.shp	WA DNR	Historic Wa National Heritage Program data showing special	State of WA	N
2005.sid	Avista	2005 color orthophoto	City of Spokane	N
Private Sites.shp	Avista	Private recreation sites	Spokane River to Lake Coeur	N
sajb directory	sajb	Wellhead capture zones modeled for the city of Spokane wells.	City of Spokane and Vicinity	N
srgeounits.shp	USGS	USGS surficial geology for the Spokane River	Spokane River	N
geomorph_lines1127.shp	NRCS	Flood Hazard Management Plan - Geomorphology	Latah Creek	N
geomorph_not_inventoried.shp	NRCS	Flood Hazard Management Plan - Geomorphology	Latah Creek	N
geomorp_poly1127.shp	NRCS	Flood Hazard Management Plan - Geomorphology	Latah Creek	N
gmazoning_cut1127.shp	NRCS	Flood Hazard Management Plan - Zoning	Latah Creek	N
heritage_fhmp_only1127.shp	NRCS	Flood Hazard Management Plan - Priority Habitat & Species	Latah Creek	N
lu1_6_clip.shp	NRCS	Flood Hazard Management Plan - Land Use	Latah Creek	N
lu7_13_clip.shp	NRCS	Flood Hazard Management Plan - Land Use	Latah Creek	N
nwi_wetland_areas.shp	NRCS	Flood Hazard Management Plan - General Wetlands	Latah Creek	N
soils_allquads_cut1127.shp	NRCS	Flood Hazard Management Plan - Soils	Latah Creek	N
wildlife_fhmp_only1127.shp	NRCS	Flood Hazard Management Plan - Priority Habitat & Species	Latah Creek	N

Appendix B

Spokane River Inventory Data Tables

City of Spokane Shoreline Master Program Update Shoreline Characterization: Parameter Definitions

Units

All lengths are in feet and areas are in acres.

Summary

Length: Length of reach measured along the centerline of the river/creek.

Shoreline Length – Length of shoreline within a reach; includes both sides of the river. Measurement derived from the length of the ordinary high water mark data.

Area:

OHWM/Meander Belt – Acreage within the ordinary high water mark (Spokane River) or meander belt (Latah Creek). This value includes the stream bed.

200 ft buffer – Acreage within the area between the ordinary high water mark/meander belt and the 200 foot buffer.

Total – The sum of the OHWM/Meander Belt and 200 foot buffer acreages. This represents the total acreage of the inventory area.

Start/End/Reach Break Justification: Recognizable landmark and Lat/Lon of the beginning and end of each reach and the reason for defining reach breaks at those points.

Hydrological & Geologic Characterization

Floodplain: Acreage within a reach that has a 1 percent chance of flooding (100 year flood plain) and is within a "Special Flood Hazard Area" (SFHA) on a Flood Insurance Rate Map (FIRM).

PFC Rating: Proper Functioning Condition (PFC) Methodology as described in Technical Report 1737-15 (U.S. Department of the Interior, Bureau of Land Management, 1998) is a qualitative methodology to determine hydrologic health of a stream system. The PFC assessment synthesizes information that is essential to determining the overall health of a riparian-wetland area. The on-the ground condition termed PFC refers to how well the physical processes are functioning. The current condition is based on a state of resiliency that will allow a riparian-wetland system to remain intact during a 25 to 30 year flow event. The PFC ratings used in the Shoreline Characterization was prepared by the Spokane County Conservation District.

Proper Functioning Condition: A riparian-wetland area is considered to be in proper functioning condition when adequate vegetation, landform, or large woody material is present to:

- Dissipate stream energy associated with high waterflows, thereby reducing erosion and improving water quality;
- Filter sediment, capture bedload, and aid floodplain development;
- Improve flood-water retention and ground-water recharge;
- Develop root masses that stabilize stream banks against cutting action;
- Develop diverse channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for fish production, waterfowl breeding and other uses;
- Support greater biodiversity.

Functional at Risk: Riparian-wetland areas that are in functional condition, but an existing soil, water, or vegetation attribute make them susceptible to degradation during a high flow event.

Lithology: Description of geologic formations at a 1:100,000 scale from the Spokane County and Vicinity Digital Geologic Map developed by the United States Geologic Survey (USGS). The intent of the descriptions are to highlight characteristics and differences that may be important for land management decisions, zoning, hazard potential, and resources, particularly sand, gravel, and crushed rock, not to fully document radiometric ages, stratigraphic correlations, or other traditional geologic information.

Geo-hazard: Geo-hazards were identified from the City of Spokane Critical Areas Mapping. They include geologic hazards, slope hazards, highly erodible soils and all potential combinations of the three. Characteristics of geologically hazardous areas, as defined in the City of Spokane Geologically Hazardous areas ordinance are as follows:

1. Erosion hazard areas are susceptible to severe erosion and may require mitigation measures, engineering solutions, or restrictions to development to protect public safety. Erosion hazard areas are defined as “at least those identified by the U.S. Department of Agriculture Natural Resource Conservation Service (NRCS) as having a severe rill and interrill erosion hazard.” The NRCS, has compiled a table that identifies all soils in the City of Spokane having a severe rill or interrill erosion hazard. This Building Site Development Water Erosion Hazard Table and associated map will be used to classify erosion hazard areas.
2. Landslide hazard areas are potentially subject to landslides based on a combination of geologic, topographic, and hydrologic factors. These include areas susceptible to landslides because of any combination of bedrock, soil, slope, structure, hydrology, or other factors. Classification of landslide hazard areas include:
 - a. Slopes greater than 80 percent subject to rockfall during seismic shaking.
 - b. Any area with a slope of 30 percent or greater.
 - c. Areas with all three of the following characteristics: slopes greater than 15 percent, steep hillsides intersecting permeable sediment overlying an impermeable sediment or bedrock, and springs or ground water seepage.
 - d. Slopes that are parallel or sub-parallel to planes of weakness (such as bedding-planes, joint systems, and fault planes) in subsurface materials.
 - e. Areas of previous failures identified by the NRCS as having a severe limitation for building site development.
 - f. Areas of previous failures designated on Department of Natural Resources (DNR) maps as landslides.
 - g. Areas potentially unstable as a result of bank carving and erosion or areas located in a canyon or on an active alluvial fan subject to inundation by debris flows or catastrophic flooding.
 - h. Areas of the Latah formation (sedimentary layers of clay interlain between basalt flows) that are subject to landslides.

- i. Areas of uncompacted fill.
3. The City of Spokane is not in an area of severe risk for seismic hazards; therefore, no designation of these areas is warranted at this time. All building activity is subject to the provisions of the Uniform Building Code which provides structural safeguards to reduce the risks from seismic activity.
4. Other geological hazard areas include volcanic and mine hazards. Initial research and investigation has determined that no mine hazards exist in the City of Spokane. In the past, the city has been impacted by volcanic ash, but this is not considered a geological hazard and does not warrant classification or designation.

Soil Characterization

Soil Map Unit: Each map unit on the general soil map is a unique natural landscape. Typically, it consists of one or more major soils or miscellaneous areas and some minor soils of miscellaneous areas. It is named for the major soils or miscellaneous areas.

Erosion hazard: Ratings that indicate the risk of loss of soil in well managed woodland. The risk is *slight* if the expected soil loss is small, *moderate* if measures are needed to control erosion during logging and road construction, and *severe* if intensive management or special equipment and methods are needed to prevent excessive loss of soil.

Permeability. The ability of a soil to transmit water or air. The estimates indicate the rate of downward movement of water when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems, septic tank absorption fields, and construction where the rate of water movement under saturated conditions affects behavior. Terms describing permeability are:

Very slow	less than 0.06 inch
Slow.....	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid.....	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

Hydrologic soil groups: are used to estimate runoff from precipitation. Soils not protected by vegetation are assigned to one of four groups. They are grouped according to the infiltration of water when the soils are thoroughly wet and receive precipitation from long-duration storms (17). The four hydrologic soil groups are:

- Group A.* Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.
- Group B.* Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well

drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a permanent high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission

Runoff potential: The chief consideration is the inherent capacity of soil bare of vegetation to permit infiltration. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Biological Characterization

Wildlife Heritage Sites: Documented point occurrences of non-game species of concern, state and federal species including those designated as endangered, threatened, sensitive, candidate, and monitor. Wildlife heritage data are collected by a variety of means from field surveys to reports from reputable sources. Scope of the database is statewide and encompasses over 230 species. The database is continually being updated. High priority species are surveyed either every year or every five years. Lower priority species are surveyed as field logistics allow or on a less rigorous schedule.

Natural Heritage Species: An Occurrence of a particular, on-the-ground observation of a rare species or ecosystem. Occurrences include:

- Rare plant species - generally defined as a "population." However, even the instance of a single plant is important and will be tracked as an Occurrence.
- High-quality wetland ecosystems and terrestrial ecosystems. These must meet minimum size and condition standards to be considered an Occurrence.

Priority Species & Priority Habitat: The Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) Database consists of polygons or points that describe occurrences of priority habitats and species. Priority species are those fish and wildlife species requiring special efforts to ensure their perpetuation because of their low numbers, sensitivity to habitat alteration, tendency to form vulnerable aggregations, or because they are of commercial, recreational, or tribal importance. All priority species mapped areas represent known use areas; they are not potential habitats. Priority habitats are areas that support diverse, unique and/or abundant communities of fish and wildlife. Mapped data are accompanied with reports detailing each priority habitat and species.

PHS polygon or point information is collected by WDFW biologists using the best information available from research efforts, surveys, or field observations. The exact source of each delineated feature is described in the accompanying report. This information represents known occurrences of priority habitats and species not potential or theoretical.

Wetlands: Percent of wetlands within a reach as determined from the Eastern Washington University Spokane County Wetland Survey.

Ecological Rating:

The ecological ratings were prepared by the SCCD. The vegetative communities in most riparian and wetland areas are structurally more varied than adjacent landscapes thereby providing a rich diversity of habitat niches. This diversity translates to the fulfillment of primary life requisites (e.g. food, cover, reproductive habitat) for a great variety of wildlife. Water, aquatic invertebrates, and fish provide resources that support species that inhabit and utilize an aquatic/upland ecotone (Hoag 1998). This study characterized and assesses these ecological conditions and restoration potential through the inventory process. Ecological condition ratings for each reach were based on the current structural diversity, density, and continuity of native plant communities. Riparian and wetland vegetative communities trap sediments and nutrients from surface runoff and prevent them from entering the aquatic system (Binford and Buchenau 1993). In addition, these communities provide a dense matrix of root systems that serve as effective filters, minimize streambank erosion and flooding damage, assist streamflow maintenance, and moderate temperatures (Hoag 1998). The ecological condition of a reach was given ratings of good, fair, and poor based on the following criterion.

Ecological Condition Ratings:

- Good: Exhibited well-connected, high quality habitats that supported a diverse assemblage of continuous native plant communities (discontinuity was less than 10 percent of the overall reach length). Spokane County PFC Assessment 8 June 2005
- Fair: Exhibited discontinuous habitats that supported minimum assemblages of native or nonnative plant communities (discontinuity was greater than 10 percent of the reach length, but less than 70 percent).
- Poor: Exhibited little to no continuity, may support monotypic communities, and/or deficient plant communities due to limiting factors such as natural conditions or anthropogenic influences (discontinuity was greater than 70 percent of reach length).

Vegetation Class:

- A – Riparian area of recent stream erosion or deposition, un-vegetated, or poorly vegetated, or dominated by non-woody vegetation (commonly reed canary grass and tansey). Includes areas of bank armoring by rip-rap or by natural fluvial lag deposits
- B – Riparian areas of stream sediments or bank materials dominated by broadleaf woody vegetation associated with wetter soils (commonly sandbar/coyote willow, golden current, and box elder).
- C- Upland areas not influenced by riparian groundwater but dominated by drought-tolerant vegetation.
- D – Un-vegetated shore areas dominated by human impacts; constructed banks, bulkheads and areas with so much foot traffic that colonization by plants is defeated.

Vegetation Sample Sites: At 63 places where the shore was physically accessible, measurements of plant presence and percent cover were made in vegetation stands that are typical and representative of types of shoreline vegetation communities. In each of these representative stands the dominant plants were identified and a percent cover was estimated for each named species. The sum of the observed plant covers is typically greater than 100 percent because plant canopies overlap.

Landuse & Cultural Characterization

Landuse: Polygon reference layer for the City Land Use Plan developed during the Growth Management Act / Comprehensive Planning process

Zoning: Polygon reference layer for City of Spokane Zoning boundaries

Development Impact Rating: The potential for impacts to stream reaches from future development was evaluated using housing density as detailed in the current Comprehensive Plan. Reaches with housing densities of one house on 40 acres or more received a rating of low. Reaches with housing densities of one house on a minimum of 10 to 40 acre lots received a medium rating. Reaches with housing densities of more than one house per ten acres received a high rating. Reaches were located on the Generalized Zoning Map (August 17, 2004). Some reaches may have more than one zoning designation, and in these situations the more zoning with the higher housing density was used. Reaches with significant current and ongoing development, such as the lower reaches on Hangman Creek, were evaluated based on the observed density and development.

Building Footprint: Building roof-prints digitized from 6 inch aerial photography.

Road Length: Miles of road within a reach

Railroad Length: Miles of railroad track within a reach.

Impervious Surface: Acreage of surface within a reach that is impervious to water. Surfaces considered impervious include

1. Curbs, walks, & driveways which are not in street right-of-way
2. Paved streets, and
3. Building roofs.

Bank Armoring: Bank hardening not naturally placed. Examples include rip rap, gabion baskets, concrete walls, etc.

Artificial Fill: Artificially placed rock aggregate comprising road embankments, bridge abutments, and stream bank riprap.

Water Quality Impairment: 303(d) listings – Listings indicate that Ecology has data showing that the water quality standards have been violated for one or more pollutants, and there is no TMDL or pollution control plan.

Cleanup Sites/ Permitted Facilities/HazMat: Locations of facilities/sites in Washington of interest to the Department of Ecology because of their effects upon the environment. Below is a list of types of facilities/sites that Ecology tracks.

SHAPING SPOKANE VOLUME III, APPENDIX D

- Air Quality Operating Permit Source
- Air Quality Annual Registration Source
- Air Quality Synthetic Minor Source
- Air Quality Periodic Registration
- Air Quality Gas Station Registration Source
- Air Quality PSD Source
- Air Quality Local Air Registration Source
- Air Quality Permit Source
- Dam Site
- Federal (Superfund) Cleanup Site
- Hazardous Waste Generator
- Hazardous Treatment Storage Facility
- LUST Facility
- State Cleanup Site
- Toxics Release Inventory
- WDP General Permit
- WDP Discharge to Groundwater
- WDP Major NPDES to Surface Water
- WDP Minor NPDES to Surface Water
- WDP Discharge to POTW
- Voluntary Cleanup Site
- EPCRA facilities
- Underground Storage Tank

Outfalls: Number of outfalls identified during fieldwork.

Parks: City of Spokane parkland.

Recreation Sites: Public recreation sites identified by Avista Corp for FERC Re-licensing of HED Project 2545.

Historic Districts: Portions of City of Spokane Historic Districts that are within the SMP Inventory area.

Historic Register Sites: Historic sites listed on the national, state, or local historic register.

Cultural Sites: Sites identified as culturally significant.

**City of Spokane Shoreline Master Program Update
Shoreline Characterization – Reach SR-1 Summary**

Summary

<i>Length (miles)</i>	<i>Shoreline Length</i>	<i>Area (acres)</i>		<i>Start</i>	<i>End</i>	<i>Reach Break Justification</i>
0.98	2.35	OHWL	60.23	Eastern City Limits	Upriver Dam	Start: Spokane eastern city limits.
		200 ft buffer	56.56	Lat: 47° 41' 38.51"	Lat: 47° 41' 8.92"	End: Beginning of Upriver Dam operating pool. End of Ponderosa Pine riparian/upland communities.
		total	116.79*	Lon: 117° 18' 18.29"	Lon: 117° 19' 42.64"	

*Includes some adjacent county land.

Hydrological & Geologic Characterization

<i>Floodplain</i>		<i>PFC Rating-Proper Functioning Condition</i>		<i>PFC Rating-Functional at Risk</i>	
area	% of reach	length	% of reach	length	% of reach
69.56	59.56%	0.98	100%	-	-

<i>Lithology</i>	<i>area</i>	<i>% of reach</i>	<i>Geohazard</i>	<i>area</i>	<i>% of reach</i>
Sediment, unconsolidated, flood deposits, gravel	55.97	47.93%	geologic		
			soil - highly erodible		
			slope >30%	0.79	0.68%
Metamorphic, Newman Lake Gneiss	0.65	0.56%	geologic & soil		
			geologic & slope		
			soil & slope		
Water bodies	60.17	51.52%	all		

Soil Characterization

<i>Soil Type</i>		<i>Acres</i>	<i>% of Reach</i>	<i>Erosion Hazard</i>	<i>Permeability</i>		<i>Hydrologic Group</i>	<i>Runoff Potential</i>	<i>Infiltration Rate</i>	<i>Soil Depth & Drainage</i>	<i>Texture</i>	<i>Water Transmission</i>
CuB	CLAYTON SANDY LOAM	11.23	9.62%	slight	0.6-2	Moderate	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate
GgA	GARRISON GRAVELLY LOAM	22.51	19.27%	slight	0.6-2	Moderate	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate
GgB	GARRISON GRAVELLY LOAM	4.02	3.44%	slight	0.6-2	Moderate	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate
GmB	GARRISON VERY GRAVELLY LOAM	14.17	12.13%	slight	0.6-2	Moderate	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate

Biological Characterization

<i>Wildlife Heritage Sites</i>	<i>Natural Heritage Species</i>	<i>area</i>	<i>% of total</i>	<i>Priority Species</i>	<i>area</i>	<i>% of total</i>	<i>Priority Habitat</i>	<i>area</i>	<i>% of total</i>
none listed	none listed	-	-	none listed	-	-	URBAN NATURAL OPEN SPACE	115.0249	98.48%

<i>Wetlands</i>	<i>area</i>	<i>% of total</i>	<i>Ecological Rating</i>	<i>length</i>	<i>% of total</i>	<i>vegetation class</i>	<i>area</i>	<i>% of total</i>	<i>vegetation sample sites</i>	<i>area</i>	<i>% of total</i>	<i>% of vegetative cover that is native species</i>
none	-	-	fair-good	2.25	95.54%	A	-	-	2	0.08	0.07%	6%
						B	4.73	4.05%				
						C	7.68	6.58%				
						D	1.50	1.28%				

Landuse & Cultural Characterization

<i>Landuse</i>	<i>area</i>	<i>% of total</i>	<i>Zoning</i>	<i>area</i>	<i>% of total</i>	<i>Development Impact Rating</i>	<i>shoreline Length</i>	<i>% of total</i>	<i>Building Footprint</i>	<i>area</i>	<i>% of total</i>
Conservation OS	9.80	8.39%	Light Industrial Zone	58.53	50.12%	High Impact	2.25	95.54%	200 ft buffer	-	-
LI	55.88	47.84%	One-Family Residence Zone	45.34	38.82%				OHWM	-	-
R 4-10	45.14	38.65%							total	-	-

<i>Total Road Length</i>	<i>Total Railroad Length</i>	<i>Bridge Crossings</i>	<i>Impervious Surfaces</i>	<i>area</i>	<i>% of total</i>	<i>Bank Armoring</i>		<i>Artificial Fill</i>	
						<i>length</i>	<i>% of total</i>	<i>area</i>	<i>% of total</i>
2.08	-	-	200 ft buffer	1.72	1.47%	0.08	3.51%	2.74	2.34%
			OHWM	-	-				
			total	1.72	1.47%				

<i>Cleanup Sites</i>	<i>Permitted Facilities/HazMat</i>	<i>Outfalls</i>	<i>Parks</i>		<i>Centennial Trail Length</i>	<i>Recreation sites</i>	<i>Historic Districts</i>		<i>Historic Register Sites</i>	<i>Cultural Sites</i>
			<i>area</i>	<i>% of total</i>			<i>area</i>	<i>% of total</i>		
1	none listed	-	4.01	3.43%	0.95	2	-	-	none listed	Contact City of Spokane Preservation Office.

**City of Spokane Shoreline Master Program Update
Shoreline Characterization – Reach SR-2 Summary**

Summary

Length (miles)	Shoreline Length	Area (acres)		Start	End	Reach Break Justification
3.32	6.90	OHWL	98.33	Upriver Dam	Mission St. Bridge	Start: Upriver Dam
		200 ft buffer	163.28	Lat: 47° 41' 8.92"	Lat: 47° 40' 18.55"	End: Beginning of Upper & Lower Falls Dam's operating pool. Land use/zoning changes.
		total	261.61	Lon: 117° 19' 42.64"	Lon: 117° 23' 16.09"	

Hydrological & Geologic Characterization

Floodplain		PFC Rating-Proper Functioning Condition		PFC Rating-Functional at Risk	
area	% of reach	length	% of reach	length	% of reach
53	20	3.32	100	-	-

Lithology	area	% of reach	Geohazard	area	% of reach
Sediment, unconsolidated, flood deposits, gravel	188.21	71.94%	geologic		
			soil - highly erodible	0.07	0.03%
			slope >30%	20.97	8.02%
Metamorphic, Newman Lake Gneiss	1.92	0.73%	geologic & soil		
			geologic & slope		
			soil & slope		
Water bodies	71.48	27.32%	all		

Soil Characterization

Soil Type		Acres	% of Reach	Erosion Hazard	Permeability		Hydrologic Group	Runoff Potential	Infiltration Rate	Soil Depth & Drainage	Texture	Water Transmission
GgA	GARRISON GRAVELLY LOAM	90.01	34.41%	slight	0.6-2	Moderate	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate
GgB	GARRISON GRAVELLY LOAM	0.06	0.02%	slight	0.6-2	Moderate	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate
GmB	GARRISON VERY GRAVELLY LOAM	34.55	13.21%	slight	0.6-2	Moderate	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate
HhA	HARDESTY SILT LOAM	0.88	0.34%	slight	0.6-2	Moderate	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate

Soil Type		Acres	% of Reach	Erosion Hazard	Permeability		Hydrologic Group	Runoff Potential	Infiltration Rate	Soil Depth & Drainage	Texture	Water Transmission
Rh	RIVERWASH	87.64	33.50%		na	na	D	High	Very Slow	Shallow or Soils with a permanent high water table	Clay with high swelling potential	Very Slow
SuE	SPOKANE EXTREMELY ROCKY COMPLEX	0.07	0.03%	severe	0.6-2	Moderate	C	-	Slow	Somewhat Poorly Drained	Moderately Fine to Fine	Slow
W		48.40	18.50%									

Biological Characterization

Wildlife Heritage Sites	Natural Heritage Species	area	% of total	Priority Species	area	% of total	Priority Habitat	area	% of total
none listed	none listed			none listed			URBAN NATURAL OPEN SPACE	244.2729	93.37%

Wetlands	area	% of total	Ecological Rating	area	% of total	vegetation class	area	% of total	vegetation sample sites	area	% of total	% of vegetative cover that is native species
None	-	-	Fair	6.81	98.63%	A	1.34	0.51%	18	5.092325	1.95%	61%
			Fair-good	0.14	2.00%	B	35.09	13.41%				
						C	43.63	16.68%				
						D	3.60	1.38%				

Landuse & Cultural Characterization

<i>Landuse</i>	<i>area</i>	<i>% of total</i>	<i>Zoning</i>	<i>area</i>	<i>% of total</i>	<i>Development Impact Rating</i>	<i>shoreline Length</i>	<i>% of total</i>	<i>Building Footprint</i>	<i>area</i>	<i>% of total</i>
Conservation OS	141.17	53.96%	Light Industrial Zone	54.51	20.84%	High Impact	7.19	104.26%	200 ft buffer	6.47	6.58%
Institutional	21.52	8.23%	Office Zone	2.09	0.80%				OHWM	0.06	0.03%
LI	31.92	12.20%	One-Family Residence Zone	138.77	53.04%				total	6.53	2.50%
R 10-20	3.61	1.38%	Two-Family Residence Zone	6.53	2.49%						
R 15-30	38.15	14.58%	Multifamily Residence Zone (R3)	15.51	5.93%						
R 4-10	9.47	3.62%	Multifamily Residence Design Zone (R3)	2.77	1.06%						
			Limited Multifamily Residence Zone (R3)	8.73	3.34%						

<i>Total Road Length</i>	<i>Total Railroad Length</i>	<i>Bridge Crossings</i>	<i>Impervious Surfaces</i>	<i>area</i>	<i>% of total</i>	<i>Bank Armoring</i>		<i>Artificial Fill</i>	
						<i>length</i>	<i>% of total</i>	<i>area</i>	<i>% of total</i>
5.67	0	2	200 ft buffer	39.45	15.08%	0.12	1.71%	2.74	1.05%
			OHWM	0.10	0.04%				
			total	0.14	0.05%				

<i>Cleanup Sites</i>	<i>Permitted Facilities/HazMat</i>	<i>Outfalls</i>	<i>Parks</i>		<i>Centennial Trail Length</i>	<i>Recreation sites</i>	<i>Historic Districts</i>		<i>Historic Register Sites</i>	<i>Cultural Sites</i>
			<i>area</i>	<i>% of total</i>			<i>area</i>	<i>% of total</i>		
none listed	6	5	68.51	26.19%	0.95	5	0.95	5	none listed	Contact City of Spokane Preservation Office

**City of Spokane Shoreline Master Program Update
Shoreline Characterization – Reach SR-3 Summary**

Summary

<i>Length (miles)</i>	<i>Shoreline Length</i>	<i>Area (acres)</i>		<i>Start</i>	<i>End</i>	<i>Reach Break Justification</i>
0.91	1.98	OHW	44.63	Mission St. Bridge	Hamilton St. Bridge	Start: Beginning of Upper & Lower Falls Dam's operating pool. Land use/zoning changes.
		200 ft buffer	35.77	Lat: 47° 40' 18.55"	Lat: 47° 39' 36.23"	End: Beginning of downtown core.
		total	80.40	Lon: 117° 23' 16.09"	Lon: 117° 23' 44.86"	

Hydrological & Geologic Characterization

<i>Floodplain</i>		<i>PFC Rating-Proper Functioning Condition</i>		<i>PFC Rating-Functional at Risk</i>	
53.59	66.65%	0.91	100%	-	-

<i>Lithology</i>	<i>area</i>	<i>% of reach</i>	<i>Geohazard</i>	<i>area</i>	<i>% of reach</i>
Sediment, unconsolidated, flood deposits, gravel	55.59	69.14%	geologic		
			soil - highly erodible		
			slope >30%	0.22	0.27%
Waterbodies	24.81	30.86%	geologic & soil		
			geologic & slope		
			soil & slope		
			all		

Soil Characterization

<i>Soil Type</i>		<i>Acres</i>	<i>% of Reach</i>	<i>Erosion Hazard</i>	<i>Permeability</i>		<i>Hydrologic Group</i>	<i>Runoff Potential</i>	<i>Infiltration Rate</i>	<i>Soil Depth & Drainage</i>	<i>Texture</i>	<i>Water Transmission</i>
GgA	GARRISON GRAVELLY LOAM	48.86	60.77%	slight	0.6-2	Moderate	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate
Rh	RIVERWASH	31.54	39.23%		na	na	D	High	Very Slow	Shallow or Soils with a permanent high water table	Clay with high swelling potential	Very Slow

Biological Characterization

<i>Wildlife Heritage Sites</i>	<i>Natural Heritage Species</i>	<i>area</i>	<i>% of total</i>	<i>Priority Species</i>	<i>area</i>	<i>% of total</i>	<i>Priority Habitat</i>	<i>area</i>	<i>% of total</i>
FALCO COLUMBARIUS (MERLIN)	none listed	-	-	none listed	-	-	URBAN NATURAL OPEN SPACE	74.46259	92.61%

<i>Wetlands</i>	<i>area</i>	<i>% of total</i>	<i>Ecological Rating</i>	<i>length</i>	<i>% of total</i>	<i>vegetation class</i>	<i>area</i>	<i>% of total</i>	<i>vegetation sample sites</i>	<i>area</i>	<i>% of total</i>	<i>% of vegetative cover that is native species</i>
none	-	-	fair	1.84	92.69%	A	-	-	8	0.74	0.92%	68%
						B	6.20435	7.72%				
						C	4.982316	6.20%				
						D	-	-				

Landuse & Cultural Characterization

<i>Landuse</i>	<i>area</i>	<i>% of total</i>	<i>Zoning</i>	<i>area</i>	<i>% of total</i>	<i>Development Impact Rating</i>	<i>shoreline Length</i>	<i>% of total</i>	<i>Building Footprint</i>	<i>area</i>	<i>% of total</i>
Commercial	14.58	18.14%	General Commercial Zone	14.58	18.14%	High Impact	1.84	92.56%	200 ft buffer	3.82	8.55%
Conservation OS	31.71	39.44%	Heavy Industrial Zone	10.84	13.48%				OHW	4.56	12.74%
HI	10.84	13.48%	Light Industrial Zone	15.73	19.57%				total	3.82	4.75%
LI	13.80	17.17%	Two-Family Residence Design Zone	6.86	8.53%						
R 15-30	9.47	11.78%	Multifamily Residence Zone (R3)	17.33	21.56%						
			Multifamily Residence Design Zone (R4)	15.05	18.72%						

<i>Total Road Length</i>	<i>Total Railroad Length</i>	<i>Bridge Crossings</i>	<i>Impervious Surfaces</i>	<i>area</i>	<i>% of total</i>	<i>Bank Armoring</i>		<i>Artificial Fill</i>	
						<i>length</i>	<i>% of total</i>	<i>area</i>	<i>% of total</i>
1.56	0.34	1	200 ft buffer	16.96	21.10%	0.24	12.23%	2.74	3.40%
			OHW	-	-				
			total	16.96	21.10%				

<i>Cleanup Sites</i>	<i>Permitted Facilities/HazMat</i>	<i>Outfalls</i>	<i>Parks</i>		<i>Centennial Trail Length</i>	<i>Recreation sites</i>	<i>Historic Districts</i>		<i>Historic Register Sites</i>	<i>Cultural Sites</i>
			<i>area</i>	<i>% of total</i>			<i>area</i>	<i>% of total</i>		
1	4	2	4.31	5.37%	4.62	-	-	-	none listed	Contact City of Spokane Preservation Office

**City of Spokane Shoreline Master Program Update
Shoreline Characterization – Reach SR-4 Summary**

Summary

<i>Length (miles)</i>	<i>Shoreline Length</i>	<i>Area (acres)</i>		<i>Start</i>	<i>End</i>	<i>Reach Break Justification</i>
2.27	4.97	OHW	107.14	Hamilton St. Bridge	Monroe St. Bridge	Start: Beginning of downtown core. Change in vegetative density. Greater percentage of basalt outcroppings.
		200 ft buffer	76.33	Lat: 47° 39' 36.23"	Lat: 47° 39' 39.17"	End: Lower Falls Dam.
		total	183.47	Lon: 117° 23' 44.86"	Lon: 117° 25' 34.65"	

Hydrological & Geologic Characterization

<i>Floodplain</i>		<i>PFC Rating-Proper Functioning Condition</i>		<i>PFC Rating-Functional at Risk</i>	
103.17	56.23%	2.27	100%	-	-

<i>Lithology</i>	<i>area</i>	<i>% of reach</i>	<i>Geohazard</i>	<i>area</i>	<i>% of reach</i>
Extrusive, Grande Ronde Basalt-Magnetostratigraphic unit N2, Columbia River Basalt Group	63.35	34.53%	geologic		
			soil - highly erodible		
			slope >30%	12.16	6.63%
Sediment, unconsolidated, flood deposits, gravel	46.45	25.32%	geologic & soil		
			geologic & slope		
			soil & slope	0.22	0.12%
Waterbodies	73.67	40.16%	all		

Soil Characterization

<i>Soil Type</i>		<i>Acres</i>	<i>% of Reach</i>	<i>Erosion Hazard</i>	<i>Permeability</i>		<i>Hydrologic Group</i>	<i>Runoff Potential</i>	<i>Infiltration Rate</i>	<i>Soil Depth & Drainage</i>	<i>Texture</i>	<i>Water Transmission</i>
GgA	GARRISON GRAVELLY LOAM	31.61	17.23%	slight	0.6-2	Moderate	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate
HoB	HESELTIME SILT LOAM-MODERATELY DEEP	15.02	8.19%	slight	0.6-2	Moderate	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate
HvC	HESELTIME VERY ROCKY COMPLEX	55.91	30.48%	slight	0.6-2	Moderate	D	High	Very Slow	Shallow or Soils with a permanent high water table	Clay with high swelling potential	Very Slow
Rh	RIVERWASH	80.69	43.98%		na	na	D	High	Very Slow	Shallow or Soils with a permanent high water table	Clay with high swelling potential	Very Slow

Soil Type		Acres	% of Reach	Erosion Hazard	Permeability		Hydrologic Group	Runoff Potential	Infiltration Rate	Soil Depth & Drainage	Texture	Water Transmission
SzE	SPRINGDALE GRAVELLY LOAMY SAND	0.22	0.12%	severe	0.6-2	Moderate	A	Low	High	Deep - Well Drained to Excessively Drained	Sands or Gravel	High

Biological Characterization

Wildlife Heritage Sites	Natural Heritage Species	area	% of total	Priority Species	area	% of total	Priority Habitat	area	% of total
FALCO PEREGRINUS (PEREGRINE FALCON)	none listed	-	-	none listed	-	-	URBAN NATURAL OPEN SPACE	182.0785	99.24%

Wetlands	area	% of total	Ecological Rating	length	% of total	vegetation class	area	% of total	vegetation sample sites	area	% of total	% of vegetative cover that is native species
Unknown type	1.61	0.73	poor	2.19	44.03%	A	-	-	6	0.49	0.26%	80%
			fair	2.47	49.69%	B	5.300306	2.89%				
			good-poor	0.20	3.95%	C	7.320685	3.99%				
						D	3.996108	2.18%				

Landuse & Cultural Characterization

<i>Landuse</i>	<i>area</i>	<i>% of total</i>	<i>Zoning</i>	<i>area</i>	<i>% of total</i>	<i>Development Impact Rating</i>	<i>shoreline Length</i>	<i>% of total</i>	<i>Building Footprint</i>	<i>area</i>	<i>% of total</i>
Commercial	22.61	12.32%	Community Business Zone	12.04	6.56%	High Impact	2.47	49.69%	200 ft buffer	14.20	13.25%
Conservation OS	47.20	25.73%	Downtown Core	2.53	1.38%	Low Impact	2.38	47.97%	OHWM	0.02	0.03%
Downtown	25.38	13.83%	West End	0.03	0.02%				total	14.22	7.75%
HI	1.76	0.96%	East End	28.55	15.56%						
Institutional	21.50	11.72%	North Bank	87.23	47.55%						
Open Space	59.74	32.56%	General Commercial Zone	23.52	12.82%						
R 15+	5.27	2.87%	Heavy Industrial Zone	1.76	0.96%						
			Multifamily Residence Zone (R4)	14.39	7.85%						
			Multifamily Residence Design Zone (R4)	13.41	7.31%						

<i>Total Road Length</i>	<i>Total Railroad Length</i>	<i>Bridge Crossings</i>	<i>Impervious Surfaces</i>	<i>area</i>	<i>% of total</i>	<i>Bank Armoring</i>		<i>Artificial Fill</i>	
						<i>length</i>	<i>% of total</i>	<i>area</i>	<i>% of total</i>
1.70	0.14	7	200 ft buffer	42.96	23.42%	1.40	28.14%	2.74	1.49%
			OHWM	0.75	0.41%				
			total	43.71	23.83%				

<i>Cleanup Sites</i>	<i>Permitted Facilities/HazMat</i>	<i>Outfalls</i>	<i>Parks</i>		<i>Centennial Trail Length</i>	<i>Recreation sites</i>	<i>Historic Districts</i>		<i>Historic Register Sites</i>	<i>Cultural Sites</i>
			<i>area</i>	<i>% of total</i>			<i>area</i>	<i>% of total</i>		
3	3	2	29.06	15.84%	1.22	2	-	-	3	Contact City of Spokane Preservation Office

**City of Spokane Shoreline Master Program Update
Shoreline Characterization – Reach SR-5 Summary**

Summary

<i>Length (miles)</i>	<i>Shoreline Length</i>	<i>Area (acres)</i>		<i>Start</i>	<i>End</i>	<i>Reach Break Justification</i>
1.73	3.53	OHWM	62.93	Monroe St. Bridge	Latah Creek	Start: Beginning of Great Gorge area.
		200 ft buffer	79.64	Lat: 47° 39' 39.17"	Lat: 47° 39' 34.80"	End: Confluence with Latah Creek. Change in land use/development pressure
		total	142.57	Lon: 117° 25' 34.65"	Lon: 117° 27' 23.80"	

Hydrological & Geologic Characterization

<i>Floodplain</i>		<i>PFC Rating-Proper Functioning Condition</i>		<i>PFC Rating-Functional at Risk</i>	
75.17	52.72%	1.73	100%	-	-

<i>Lithology</i>	<i>area</i>	<i>% of reach</i>	<i>Geohazard</i>	<i>area</i>	<i>% of reach</i>
Extrusive, Grande Ronde Basalt-Magnetostratigraphic unit N2, Columbia River Basalt Group	3.58	2.51%	geologic	7.7	5.40%
			soil - highly erodible	27.35	19.18%
			slope >30%	17.41	12.21%
Sediment, unconsolidated, flood deposits, gravel	94.77	66.47%	geologic & soil	0.03	0.02%
			geologic & slope	2.3	1.61%
			soil & slope	19.85	13.92%
Waterbodies	44.22	31.02%	all		

Soil Characterization

<i>Soil Type</i>		<i>Acres</i>	<i>% of Reach</i>	<i>Erosion Hazard</i>	<i>Permeability</i>		<i>Hydrologic Group</i>	<i>Runoff Potential</i>	<i>Infiltration Rate</i>	<i>Soil Depth & Drainage</i>	<i>Texture</i>	<i>Water Transmission</i>
HoB	HESELTIME SILT LOAM- MODERATELY DEEP	0.94	0.66%	slight	0.6-2	Moderate	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate
HvC	HESELTIME VERY ROCKY COMPLEX	12.62	8.85%	slight	0.6-2	Moderate	D	High	Very Slow	Shallow or Soils with a permanent high water table	Clay with high swelling potential	Very Slow
McB	MARBLE VARIANT SANDY LOAM	10.10	7.08%	slight	0.2-0.6	Moderate ly Slow	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate
SxB	SPRINGDALE GRAVELLY SANDY LOAM- DEEP	15.72	11.03%	slight	0.2-0.6	Moderate ly Slow	A	Low	High	Deep - Well Drained to Excessively Drained	Sands or Gravel	High

Soil Type		Acres	% of Reach	Erosion Hazard	Permeability		Hydrologic Group	Runoff Potential	Infiltration Rate	Soil Depth & Drainage	Texture	Water Transmission
SzE	SPRINGDALE GRAVELLY LOAMY SAND	47.24	33.13%	severe	0.6-2	Moderate	A	Low	High	Deep - Well Drained to Excessively Drained	Sands or Gravel	High

Biological Characterization

Wildlife Heritage Sites	Natural Heritage Species	area	% of total	Priority Species	area	% of total	Priority Habitat	area	% of total
none listed	none listed	-	-	none listed	-	-	URBAN NATURAL OPEN SPACE	142.57	100.00%

Wetlands	area	% of total	Ecological Rating	length	% of total	vegetation class	area	% of total	vegetation sample sites	area	% of total	% of vegetative cover that is native species
none	-	-	poor	1.77	50.22%	A	0.331332	0.23%	none	-	-	-
			good	1.70	48.21%	B	14.26378	10.00%				
						C	40.78615	28.61%				
						D	1.054342	0.74%				

Landuse & Cultural Characterization

Landuse	area	% of total	Zoning	area	% of total	Development Impact Rating	shoreline Length	% of total	Building Footprint	area	% of total
Commercial	1.50	1.05%	Community Business Zone	19.08	13.38%	High Impact	3.37	95.40%	200 ft buffer	1.19	1.89%
Conservation OS	119.77	84.00%	West End	7.72	5.41%				OHWM	0.01	0.01%
Downtown	3.58	2.51%	One-Family Residence Zone	86.66	60.79%				total	1.20	0.84%
Institutional	2.78	1.95%	Two-Family Residence Zone	24.12	16.92%						
R 15+	2.81	1.97%	Multifamily Residence Zone (R3)	4.64	3.25%						

<i>Total Road Length</i>	<i>Total Railroad Length</i>	<i>Bridge Crossings</i>	<i>Impervious Surfaces</i>	<i>area</i>	<i>% of total</i>	<i>Bank Armoring</i>		<i>Artificial Fill</i>	
						<i>length</i>	<i>% of total</i>	<i>area</i>	<i>% of total</i>
1.36	-	2	200 ft buffer	8.16	5.72%	0.27	7.68%	2.74	1.92%
			OHWM	15.89	11.15%				
			total	24.05	16.87%				

<i>Cleanup Sites</i>	<i>Permitted Facilities/HazMat</i>	<i>Outfalls</i>	<i>Parks</i>		<i>Centennial Trail Length</i>	<i>Recreation sites</i>	<i>Historic Districts</i>		<i>Historic Register Sites</i>	<i>Cultural Sites</i>
			<i>area</i>	<i>% of total</i>			<i>area</i>	<i>% of total</i>		
none listed	9	5	42.48	29.79%	0.07	2	11.74	8.23%	15	Contact City of Spokane Preservation Office.

**City of Spokane Shoreline Master Program Update
Shoreline Characterization – Reach SR-6 Summary**

Summary

<i>Length (miles)</i>	<i>Shoreline Length</i>	<i>Area (acres)</i>		<i>Start</i>	<i>End</i>	<i>Reach Break Justification</i>
2.48	5.16	OHWM	100.49	Latah Creek	TJ Menach Bridge	Start: Confluence with Latah Creek
		200 ft buffer	120.10	Lat: 47° 39' 34.80"	Lat: 47° 40' 47.50"	End: Change in vegetative communities. Change in bank slope
		total	220.59	Lon: 117° 27' 23.80"	Lon: 117° 27' 9.54"	

Hydrological & Geologic Characterization

<i>Floodplain</i>		<i>PFC Rating-Proper Functioning Condition</i>		<i>PFC Rating-Functional at Risk</i>	
128.28	58.15%	2.48	100%	-	-

<i>Lithology</i>	<i>area</i>	<i>% of reach</i>	<i>Geohazard</i>	<i>area</i>	<i>% of reach</i>
Qfg – sediment, unconsolidated Flood deposits, gravel	151.26	68.57%	geologic	8.28	3.75%
			soil - highly erodible	23.43	10.62%
			slope >30%	35.98	16.31%
			geologic & soil	2.36	1.07%
Water bodies	69.33	31.43%	geologic & slope	0.32	0.15%
			soil & slope	24.52	11.12%
			all	0.3	0.14%

Soil Characterization

<i>Soil Type</i>		<i>Acres</i>	<i>% of Reach</i>	<i>Erosion Hazard</i>	<i>Permeability</i>		<i>Hydrologic Group</i>	<i>Runoff Potential</i>	<i>Infiltration Rate</i>	<i>Soil Depth & Drainage</i>	<i>Texture</i>	<i>Water Transmission</i>
GgA	GARRISON GRAVELLY LOAM	0.04	0.02%	slight	0.6-2	Moderate	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate
McB	MARBLE VARIANT SANDY LOAM	14.96	6.78%	slight	0.2-0.6	Moderate ly Slow	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate
QUAR		1.32	0.60%		0.2-0.6	Moderate ly Slow	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate
Rh	RIVERWASH	94.90	43.02%		na	na	D	High	Very Slow	Shallow or Soils with a permanent high water table	Clay with high swelling potential	Very Slow

<i>Soil Type</i>	<i>Acres</i>	<i>% of Reach</i>	<i>Erosion Hazard</i>	<i>Permeability</i>		<i>Hydrologic Group</i>	<i>Runoff Potential</i>	<i>Infiltration Rate</i>	<i>Soil Depth & Drainage</i>	<i>Texture</i>	<i>Water Transmission</i>
SwB SPRINGDALE GRAVELLY SANDY LOAM	0.67	0.30%	slight	0.6-2	Moderate	C	-	Slow	Somewhat Poorly Drained	Moderately Fine to Fine	Slow
SxB SPRINGDALE GRAVELLY SANDY LOAM- DEEP	7.56	3.43%	slight	0.2-0.6	Moderately Slow	A	Low	High	Deep - Well Drained to Excessively Drained	Sands or Gravel	High
SyB SPRINGDALE COBBLY SANDY LOAM	50.50	22.89%	slight	0.2-0.6	Moderately Slow	A	Low	High	Deep - Well Drained to Excessively Drained	Sands or Gravel	High
SzE SPRINGDALE GRAVELLY LOAMY SAND	50.63	22.95%	severe	0.6-2	Moderate	A	Low	High	Deep - Well Drained to Excessively Drained	Sands or Gravel	High

Biological Characterization

<i>Wildlife Heritage Sites</i>	<i>Natural Heritage Species</i>	<i>area</i>	<i>% of total</i>	<i>Priority Species</i>	<i>area</i>	<i>% of total</i>	<i>Priority Habitat</i>	<i>area</i>	<i>% of total</i>
none listed	none listed	-	-	none listed	-	-	OLD-GROWTH/MATURE FOREST URBAN NATURAL OPEN SPACE	13.58 207	6.16% 93.84%

<i>Wetlands</i>	<i>area</i>	<i>% of total</i>	<i>Ecological Rating</i>	<i>length</i>	<i>% of total</i>	<i>vegetation class</i>	<i>area</i>	<i>% of total</i>	<i>vegetation sample sites</i>	<i>area</i>	<i>% of total</i>	<i>% of vegetative cover that is native species</i>
Seasonal Marsh	1.60	0.73	good	5	96.93%	A	2.835102	1.29%	16	16.82	7.62%	75%
			fair-good	0.001	0.02%	B	40.42204	18.32%				
						C	86.29946	39.12%				
						D	-	-				

Landuse & Cultural Characterization

<i>Landuse</i>	<i>area</i>	<i>% of total</i>	<i>Zoning</i>	<i>area</i>	<i>% of total</i>	<i>Development Impact Rating</i>	<i>shoreline Length</i>	<i>% of total</i>	<i>Building Footprint</i>	<i>area</i>	<i>% of total</i>
Conservation OS	142.81	64.74%	One-Family Residence Zone	156.56	70.97%	High Impact	5.00	96.87%	200 ft buffer	0.00	0.00%
Institutional	24.38	11.05%	Multifamily Residence Zone (R4)	56.88	25.79%				OHWM	2.45	2.04%
Open Space	8.87	4.02%	Limited Multifamily Residence Zone (R4)	7.14	3.24%				total	2.45	1.11%
R 15+	10.02	4.54%									
R 4-10	34.51	15.65%									

<i>Total Road Length</i>	<i>Total Railroad Length</i>	<i>Bridge Crossings</i>	<i>Impervious Surfaces</i>	<i>area</i>	<i>% of total</i>	<i>Bank Armoring</i>		<i>Artificial Fill</i>	
						<i>length</i>	<i>% of total</i>	<i>area</i>	<i>% of total</i>
0.28	-	1	200 ft buffer	5.79	2.63%	-	-	-	-
			OHWM		0.00%				
			total	5.79	2.63%				

<i>Cleanup Sites</i>	<i>Permitted Facilities/HazMat</i>	<i>Outfalls</i>	<i>Parks</i>		<i>Centennial Trail Length</i>	<i>Recreation sites</i>	<i>Historic Districts</i>		<i>Historic Register Sites</i>	<i>Cultural Sites</i>
			<i>area</i>	<i>% of total</i>			<i>area</i>	<i>% of total</i>		
1	none listed	none identified	29.68	13.46%	-	none identified	-	-	-	Contact City of Spokane Preservation Office

**City of Spokane Shoreline Master Program Update
Shoreline Characterization – Reach SR-7 Summary**

Summary

<i>Length (miles)</i>	<i>Shoreline Length</i>	<i>Area (acres)</i>		<i>Start</i>	<i>End</i>	<i>Reach Break Justification</i>
6.44	13.26	OHW	225.04	TJ Menach Bridge	Northern City Limits	Start: Change in vegetative communities – Ponderosa Pine riparian/upland communities more prominent. Park land use more predominant.
		200 ft buffer	322.64	Lat: 47° 40' 47.50"	Lat: 47° 43' 50.08"	End: Northern border of city limits.
		total	547.68	Lon: 117° 27' 9.54"	Lon: 117° 30' 38.15"	

Hydrological & Geologic Characterization

<i>Floodplain</i>		<i>PFC Rating-Proper Functioning Condition</i>		<i>PFC Rating-Functional at Risk</i>	
242.81	44.33%	6.44	100%	-	-

<i>Lithology</i>	<i>area</i>	<i>% of reach</i>	<i>Geohazard</i>	<i>area</i>	<i>% of reach</i>
Extrusive, Grande Ronde Basalt-Magnetostatigraphic unit N2, Columbia River Basalt Group	0.29	0.05%	geologic	28.87	5.27%
			soil - highly erodible	51.66	9.43%
Sediment, unconsolidated, flood deposits, gravel	313.50	57.24%	slope >30%	53.94	9.85%
			geologic & soil	0.26	0.05%
Sediment, unconsolidated, glaciolacustrine and outburst flood deposits	28.19	5.15%	geologic & slope	10.23	1.87%
			soil & slope	43.56	7.95%
Waterbodies	205.70	37.56%	all	0.16	0.03%

Soil Characterization

<i>Soil Type</i>		<i>Acres</i>	<i>% of Reach</i>	<i>Erosion Hazard</i>	<i>Permeability</i>		<i>Hydrologic Group</i>	<i>Runoff Potential</i>	<i>Infiltration Rate</i>	<i>Soil Depth & Drainage</i>	<i>Texture</i>	<i>Water Transmission</i>
McB	MARBLE VARIANT SANDY LOAM	13.35	2.44%	slight	0.2-0.6	Moderate ly Slow	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate
Rh	RIVERWASH	54.24	9.90%		na	na	D	High	Very Slow	Shallow or Soils with a permanent high water table	Clay with high swelling potential	Very Slow
Ro	ROCK OUTCROP	12.03	2.20%		na	na	D	High	Very Slow	Shallow or Soils with a permanent high water table	Clay with high swelling potential	Very Slow
SoE	SPEIGLE VERY STONY SILT LOAM	4.67	0.85%	severe	0.6-2	Moderate	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate

<i>Soil Type</i>	<i>Acres</i>	<i>% of Reach</i>	<i>Erosion Hazard</i>	<i>Permeability</i>		<i>Hydrologic Group</i>	<i>Runoff Potential</i>	<i>Infiltration Rate</i>	<i>Soil Depth & Drainage</i>	<i>Texture</i>	<i>Water Transmission</i>
SwB SPRINGDALE GRAVELLY SANDY LOAM	81.06	14.80%	slight	0.6-2	Moderate	C	-	Slow	Somewhat Poorly Drained	Moderately Fine to Fine	Slow
SxB SPRINGDALE GRAVELLY SANDY LOAM- DEEP	97.21	17.75%	slight	0.2-0.6	Moderately Slow	A	Low	High	Deep - Well Drained to Excessively Drained	Sands or Gravel	High
SyB SPRINGDALE COBBLY SANDY LOAM	53.83	9.83%	slight	0.2-0.6	Moderately Slow	A	Low	High	Deep - Well Drained to Excessively Drained	Sands or Gravel	High
SzE SPRINGDALE GRAVELLY LOAMY SAND	90.97	16.61%	severe	0.6-2	Moderate	A	Low	High	Deep - Well Drained to Excessively Drained	Sands or Gravel	High

Biological Characterization

<i>Wildlife Heritage Sites</i>	<i>Natural Heritage Species</i>	<i>area</i>	<i>% of total</i>	<i>Priority Species</i>	<i>area</i>	<i>% of total</i>	<i>Priority Habitat</i>	<i>area</i>	<i>% of total</i>
FLUMINICOLA COLUMBIANA (GIANT COLUMBIA SPIRE SNAIL)	Antennaria parvifolia (Nuttall's Pussy-toes)	29.37	5.36%	NORTHWEST WHITE-TAILED DEER	11.51	2.10%	CLIFFS/BLUFFS	0.33	0.06%
ANODONTA CALIFORNIENSIS (CALIFORNIA FLOATER)	Spartina pectinata (Prairie Cordgrass)	44.79	8.18%				URBAN NATURAL OPEN SPACE	547.35	99.94%
FISHEROLA NUTTALLI (GIANT COLUMBIA RIVER LIMPET)									
PANDION HALIAETUS (OSPREY)									

<i>Wetlands</i>	<i>area</i>	<i>% of total</i>	<i>Ecological Rating</i>	<i>length</i>	<i>% of total</i>	<i>vegetation class</i>	<i>area</i>	<i>% of total</i>	<i>vegetation sample sites</i>	<i>area</i>	<i>% of total</i>	<i>% of vegetative cover that is native species</i>
Permanent Marsh	0.11	0.02	good	13.21	99.64%	A	10.26408	1.87%	19	7.04	1.29%	49%
Seasonal Marsh	0.07	0.01				B	37.38831	6.83%				
						C	93.74944	17.12%				
						D	-	-				

Landuse & Cultural Characterization

<i>Landuse</i>	<i>area</i>	<i>% of total</i>	<i>Zoning</i>	<i>area</i>	<i>% of total</i>	<i>Development Impact Rating</i>	<i>shoreline Length</i>	<i>% of total</i>	<i>Building Footprint</i>	<i>area</i>	<i>% of total</i>
Conservation OS	280.35	51.19%	One-Family Residence Zone	173.35	31.65%	High Impact	13.21	99.66%	200 ft buffer	-	-
Institutional	11.50	2.10%	Multifamily Residence Zone (R4)	44.28	8.09%				OHW	1.23	0.38%
Open Space	7.06	1.29%							total	1.23	0.22%
R 4-10	11.91	2.17%									

<i>Total Road Length</i>	<i>Total Railroad Length</i>	<i>Bridge Crossings</i>	<i>Impervious Surfaces</i>	<i>area</i>	<i>% of total</i>	<i>Bank Armoring</i>		<i>Artificial Fill</i>	
						<i>length</i>	<i>% of total</i>	<i>area</i>	<i>% of total</i>
3.26	-	-	200 ft buffer	11.05	2.02%	-	-	-	-
			OHW		0.00%				
			total	11.05	2.02%				

<i>Cleanup Sites</i>	<i>Permitted Facilities/HazMat</i>	<i>Outfalls</i>	<i>Parks</i>		<i>Centennial Trail Length</i>	<i>Recreation sites</i>	<i>Historic Districts</i>		<i>Historic Register Sites</i>	<i>Cultural Sites</i>
			<i>area</i>	<i>% of total</i>			<i>area</i>	<i>% of total</i>		
none listed	1	none identified	67.70	12.36%	-	5	12.43	2.27%	-	Contact City of Spokane Preservation Office

Appendix C

Latah Creek Inventory Data Tables

**City of Spokane Shoreline Master Program Update
Shoreline Characterization – Reach LC-1 Summary**

Summary

<i>Length (miles)</i>	<i>Shoreline Length</i>	<i>Area (acres)</i>				<i>Start</i>	<i>End</i>	<i>Reach Break Justification</i>
1.93	3.42	OHWM	27.4	Meander Belt ¹	93.7	Southern City Limits/Hatch Rd	Meadow Lane Rd. Bridge	Start: Spokane southern city limits.
		200' Buffer	99.3	200' Buffer	79.4	Lat: 47° 35' 15.71"	Lat: 47° 36' 10.69"	End: Beginning of the Creek at Qualchan golf course.
		total	126.7	Total ²	173.1	Lon: 117° 24' 8.51"	Lon: 117° 24' 21.05"	

1 – Meander Belt includes OHWM acreage.

2 – Used to calculate percentages.

Hydrological & Geologic Characterization

<i>Floodplain</i>		<i>PFC Rating-Proper Functioning Condition</i>		<i>PFC Rating-Functional at Risk</i>	
48.04	27.76%	0.74	38.60%	1.28	66.64%

<i>Lithology</i>	<i>area</i>	<i>% of reach</i>	<i>Geohazard</i>	<i>area</i>	<i>% of reach</i>
Extrusive, Grande Ronde Basalt-Magnetostratigraphic unit N2, Columbia River Basalt Group	0.01	0.00%	geologic	93.76	54.18%
			soil - highly erodible	9.68	5.59%
			slope >30%	3.53	2.04%
Sediment, unconsolidated, glaciolacustrine and outburst flood deposits	173.06	100.00%	geologic & soil	19.22	11.11%
			geologic & slope	5	2.89%
			soil & slope	21.94	12.68%
			all	2.12	1.22%

Soil Characterization

<i>Soil Map Unit</i>		<i>Acres</i>	<i>% of Reach</i>	<i>Erosion Hazard</i>	<i>Permeability</i>		<i>Hydrologic Group</i>	<i>Runoff Potential</i>	<i>Infiltration Rate</i>	<i>Soil Depth & Drainage</i>	<i>Texture</i>	<i>Water Transmission</i>
BpB	BONG AND PHOEBE FINE SANDY LOAMS	5.73	3.31%	slight	0.2-0.6	Moderately Slow	A	Low	High	Deep - Well Drained to Excessively Drained	Sands or Gravel	High
CuB	CLAYTON SANDY LOAM	4.74	2.74%	slight	0.6-2	Moderate	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate
HhA	HARDESTY SILT LOAM	5.12	2.96%	slight	0.6-2	Moderate	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate
HmA	HARDESTY SILT LOAM-MODERATELY SHALLOW	3.83	2.21%	slight	0.6-2	Moderate	C	-	Slow	Somewhat Poorly Drained	Moderately Fine to Fine	Slow

Soil Map Unit		Acres	% of Reach	Erosion Hazard	Permeability		Hydrologic Group	Runoff Potential	Infiltration Rate	Soil Depth & Drainage	Texture	Water Transmission
McB	MARBLE VARIANT SANDY LOAM	22.89	13.23%	slight	0.2-0.6	Moderately Slow	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate
NcA	NARCISSE SILT LOAM	3.57	2.06%	slight	0.6-2	0	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate
PsA	PHOEBE SANDY LOAM	31.14	17.99%	slight	0.2-0.6	Moderately Slow	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate
Rh	RIVERWASH	43.10	24.90%		na	na	D	High	Very Slow	Shallow or Soils with a permanent high water table	Clay with high swelling potential	Very Slow
SoE	SPEIGLE VERY STONY SILT LOAM	9.72	5.62%	severe	0.6-2	Moderate	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate
SzE	SPRINGDALE GRAVELLY LOAMY SAND	43.22	24.97%	severe	0.6-2	Moderate	A	Low	High	Deep - Well Drained to Excessively Drained	Sands or Gravel	High

Biological Characterization

Wildlife Heritage Sites	Natural Heritage Species	area	% of total	Priority Species	area	% of total	Priority Habitat	area	% of total
none listed	none listed	-	-	NORTHWEST WHITE-TAILED DEER ROCKY MOUNTAIN ELK	110.0215 173.065	63.57% 100.00%	RIPARIAN ZONES URBAN NATURAL OPEN SPACE	98.68587 6.751017	57.02% 3.90%

Wetlands	area	% of total	Ecological Rating	length	% of total	vegetation class	area	% of total	vegetation sample sites	area	% of total	% of vegetative cover that is native species
None	-	-	Good Fair	1.49 2.57	43.46% 75.02%	A B C D	6.759302 28.45218 47.48332	3.91% 16.44% 27.44%	11	4.2	2.43%	17%

Landuse & Cultural Characterization

<i>Landuse</i>	<i>area</i>	<i>% of total</i>	<i>Zoning</i>	<i>area</i>	<i>% of total</i>	<i>Development Impact Rating</i>	<i>shoreline Length</i>	<i>% of total</i>	<i>Building Footprint</i>	<i>area</i>	<i>% of total</i>
Conservation OS	52.01	30.05%	One-Family Residence Zone	172.36	99.59%	High Impact	4.05	100%	200 ft buffer	2.26	2.41%
Potential OS	12.60	7.28%							OHWM	0.08	0.11%
R 4-10	107.75	62.26%							total	2.34	1.35%

<i>Total Road Length</i>	<i>Total Railroad Length</i>	<i>Bridge Crossings</i>	<i>Impervious Surfaces</i>	<i>area</i>	<i>% of total</i>	<i>Bank Armoring</i>		<i>Artificial Fill</i>	
						<i>length</i>	<i>% of total</i>	<i>area</i>	<i>% of total</i>
2.35	-	2	200 ft buffer	12.64	7.30%	0.23	6.81%	-	-
			OHWM	0.92	0.53%				
			total	13.55	7.83%				

<i>Cleanup Sites</i>	<i>Permitted Facilities/HazMat</i>	<i>Outfalls</i>	<i>Parks</i>		<i>Centennial Trail Length</i>	<i>Recreation sites</i>	<i>Historic Districts</i>		<i>Historic Register Sites</i>	<i>Cultural Sites</i>
			<i>area</i>	<i>% of total</i>			<i>area</i>	<i>% of total</i>		
none listed	none listed	None identified	68.68	39.69%	-	none listed	-	-	none listed	Contact City of Spokane Preservation Office.

**City of Spokane Shoreline Master Program Update
Shoreline Characterization – Reach LC-2 Summary**

Summary

<i>Length (miles)</i>	<i>Shoreline Length</i>	<i>Area (acres)</i>				<i>Start</i>	<i>End</i>	<i>Reach Break Justification</i>
1.77	3.19	OHWM	34.3	Meander Belt ¹	87.3	Meadow Lane Rd. Bridge	North end of The Creek at Qualchan Golf Course	Start: Beginning of the Creek at Qualchan golf course.
		200' Buffer	82.1	200' Buffer	175.3	Lat: 47° 36' 10.69"	Lat: 47° 36' 50.17"	End: End of the Creek at Qualchan golf course.
		total	116.4	Total ²	162.5	Lon: 117° 24' 21.05"	Lon: 117° 25' 24.35"	

1 – Meander Belt includes OHWM acreage.

2 – Used to calculate percentages.

Hydrological & Geologic Characterization

<i>Floodplain</i>		<i>PFC Rating-Proper Functioning Condition</i>		<i>PFC Rating-Functional at Risk</i>	
51.36	31.60%	0.36	20.30%	1.41	79.82%

<i>Lithology</i>	<i>area</i>	<i>% of reach</i>	<i>Geohazard</i>	<i>area</i>	<i>% of reach</i>
Sediment, unconsolidated, glaciolacustrine and outburst flood deposits	162.54	100.00%	geologic	70.88	43.61%
			soil - highly erodible	16.23	9.99%
			slope >30%	2.3	1.42%
			geologic & soil	28.56	17.57%
			geologic & slope	1.99	1.22%
			soil & slope	14.33	8.82%
			all	6.24	3.84%

Soil Characterization

<i>Soil Type</i>		<i>Acres</i>	<i>% of Reach</i>	<i>Erosion Hazard</i>	<i>Permeability</i>		<i>Hydrologic Group</i>	<i>Runoff Potential</i>	<i>Infiltration Rate</i>	<i>Soil Depth & Drainage</i>	<i>Texture</i>	<i>Water Transmission</i>
HhA	HARDESTY SILT LOAM	2.31	1.42%	slight	0.6-2	Moderate	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate
MaC	MARBLE LOAMY SAND	6.63	4.08%	slight	0.6-2	Moderate	A	Low	High	Deep - Well Drained to Excessively Drained	Sands or Gravel	High
McB	MARBLE VARIANT SANDY LOAM	37.93	23.34%	slight	0.2-0.6	Moderately Slow	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate
PsA	PHOEBE SANDY LOAM	8.10	4.99%	slight	0.2-0.6	Moderately Slow	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well	Moderately Fine to Moderately	Moderate

Soil Type		Acres	% of Reach	Erosion Hazard	Permeability		Hydrologic Group	Runoff Potential	Infiltration Rate	Soil Depth & Drainage	Texture	Water Transmission
										Drained	Coarse	
Rh	RIVERWASH	46.75	28.76%		na	na	D	High	Very Slow	Shallow or Soils with a permanent high water table	Clay with high swelling potential	Very Slow
SzE	SPRINGDALE GRAVELLY LOAMY SAND	60.82	37.42%	severe	0.6-2	Moderate	A	Low	High	Deep - Well Drained to Excessively Drained	Sands or Gravel	High

Biological Characterization

Wildlife Heritage Sites	Natural Heritage Species	area	% of total	Priority Species	area	% of total	Priority Habitat	area	% of total
none listed	none listed	-	-	NORTHWEST WHITE-TAILED DEER ROCKY MOUNTAIN ELK	62.37374 121.5788	38.37% 74.80%	RIPARIAN ZONES URBAN NATURAL OPEN SPACE	62.37374 54.04527	38.37% 33.25%

Wetlands	area	% of total	Ecological Rating	length	% of total	vegetation class	area	% of total	vegetation sample sites	area	% of total	% of vegetative cover that is native species
Seasonal marsh	0.89	0.55	good	0.72	22.52%	A	1.811959	1.11%	11	4.88	3.00%	25
			poor-fair	2.82	88.55%	B	33.17415	20.41%				
						C	51.13727	31.46%				
						D						

Landuse & Cultural Characterization

<i>Landuse</i>	<i>area</i>	<i>% of total</i>	<i>Zoning</i>	<i>area</i>	<i>% of total</i>	<i>Development Impact Rating</i>	<i>shoreline Length</i>	<i>% of total</i>	<i>Building Footprint</i>	<i>area</i>	<i>% of total</i>
Conservation OS	10.36	6.37%	One-Family Residence Zone	162.54	100.00%	High Impact	3.54	100%	200 ft buffer	0.45	0.52%
Open Space	109.12	67.14%							OHW	0.39	0.51%
Potential OS	18.95	11.66%							total	0.84	0.52%
R 4-10	24.11	14.84%									

<i>Total Road Length</i>	<i>Total Railroad Length</i>	<i>Bridge Crossings</i>	<i>Impervious Surfaces</i>	<i>area</i>	<i>% of total</i>	<i>Bank Armoring</i>		<i>Artificial Fill</i>	
						<i>length</i>	<i>% of total</i>	<i>area</i>	<i>% of total</i>
2.35	-	-	200 ft buffer	6.99	4.30%	0.60	18.84%	-	-
			OHW	0.56	0.35%				
			total	7.55	4.65%				

<i>Cleanup Sites</i>	<i>Permitted Facilities/HazMat</i>	<i>Outfalls</i>	<i>Parks</i>		<i>Centennial Trail Length</i>	<i>Recreation sites</i>	<i>Historic Districts</i>		<i>Historic Register Sites</i>	<i>Cultural Sites</i>
			<i>area</i>	<i>% of total</i>			<i>area</i>	<i>% of total</i>		
-	none listed	none identified	137.06	84.33%	-	none listed	137.06	84.33%	none listed	Contact City of Spokane Preservation Office.

**City of Spokane Shoreline Master Program Update
Shoreline Characterization – Reach LC-3 Summary**

Summary

<i>Length (miles)</i>	<i>Shoreline Length</i>	<i>Area (acres)</i>				<i>Start</i>	<i>End</i>	<i>Reach Break Justification</i>
1.12	2.16	OHWM	26.2	Meander Belt ¹	58.9	North end of The Creek at Qualchan Golf Course	Railroad Trestle	Start: Beginning of significant lateral confinement
		200' Buffer	53.5	200' Buffer	50.4	Lat: 47° 36' 50.17"	Lat: 47° 37' 30.85"	End: End of significant lateral confinement.
		total	79.7	Total ²	109.3	Lon: 117° 25' 24.35"	Lon: 117° 26' 10.75"	

1 – Meander Belt includes OHWM acreage.

2 – Used to calculate percentages.

Hydrological & Geologic Characterization

<i>Floodplain</i>		<i>PFC Rating-Proper Functioning Condition</i>		<i>PFC Rating-Functional at Risk</i>	
43.15	39.47%	-	-	1.11	100.00%

<i>Lithology</i>	<i>area</i>	<i>% of reach</i>	<i>Geohazard</i>	<i>area</i>	<i>% of reach</i>
Sediment, unconsolidated, glaciolacustrine and outburst flood deposits	109.31	100.00%	geologic	78.38	71.70%
			soil - highly erodible	3.34	3.06%
			slope >30%	1.93	1.77%
			geologic & soil	10.44	9.55%
			geologic & slope	4.5	4.12%
			soil & slope	3	2.74%
			all	2.07	1.89%

Soil Characterization

<i>Soil Type</i>		<i>Acres</i>	<i>% of Reach</i>	<i>Erosion Hazard</i>	<i>Permeability</i>		<i>Hydrologic Group</i>	<i>Runoff Potential</i>	<i>Infiltration Rate</i>	<i>Soil Depth & Drainage</i>	<i>Texture</i>	<i>Water Transmission</i>
HhA	HARDESTY SILT LOAM	38.97	35.65%	slight	0.6-2	Moderate	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate
MaC	MARBLE LOAMY SAND	6.46	5.91%	slight	0.6-2	Moderate	A	Low	High	Deep - Well Drained to Excessively Drained	Sands or Gravel	High
McB	MARBLE VARIANT SANDY LOAM	11.00	10.06%	slight	0.2-0.6	Moderately Slow	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate
Rh	RIVERWASH	34.08	31.17%		na	na	D	High	Very Slow	Shallow or Soils with a permanent high water table	Clay with high swelling	Very Slow

Soil Type		Acres	% of Reach	Erosion Hazard	Permeability		Hydrologic Group	Runoff Potential	Infiltration Rate	Soil Depth & Drainage	Texture	Water Transmission
											potential	
SzE	SPRINGDALE GRAVELLY LOAMY SAND	18.83	17.22%	severe	0.6-2	Moderate	A	Low	High	Deep - Well Drained to Excessively Drained	Sands or Gravel	High

Biological Characterization

Wildlife Heritage Sites	Natural Heritage Species	area	% of total	Priority Species	area	% of total	Priority Habitat	area	% of total
none listed	none listed	-	-	none listed	-	-	URBAN NATURAL OPEN SPACE	109.3154	100.00%

Wetlands	area	% of total	Ecological Rating	length	% of total	vegetation class	area	% of total	vegetation sample sites	area	% of total	% of vegetative cover that is native species
None	-	-	poor-fair	2.21	102.43%	A	1.135013	1.04%	4	0.93	0.85%	40%
						B	20.22788	18.50%				
						C	33.7548	30.88%				
						D	-	-				

Landuse & Cultural Characterization

<i>Landuse</i>	<i>area</i>	<i>% of total</i>	<i>Zoning</i>	<i>area</i>	<i>% of total</i>	<i>Development Impact Rating</i>	<i>shoreline Length</i>	<i>% of total</i>	<i>Building Footprint</i>	<i>area</i>	<i>% of total</i>
AG	37.46	34.26%	Community Business Zone	3.69	3.38%	High Impact	2.21	102.43%	200 ft buffer	0.01	0.01%
Commercial	3.70	3.38%	Neighborhood Retail Zone	2.09	1.91%				OHWM	0.76	1.50%
Conservation OS	18.23	16.68%	One-Family Residence Zone	103.54	94.71%				total	0.76	0.70%
Mini Center	2.09	1.91%									
Open Space	4.18	3.83%									
Potential OS	18.90	17.29%									
R 4-10	28.94	26.47%									

<i>Total Road Length</i>	<i>Total Railroad Length</i>	<i>Bridge Crossings</i>	<i>Impervious Surfaces</i>	<i>area</i>	<i>% of total</i>	<i>Bank Armoring</i>		<i>Artificial Fill</i>	
						<i>length</i>	<i>% of total</i>	<i>area</i>	<i>% of total</i>
7.84	0.48	-	200 ft buffer	8.54	7.81%	0.34	15.82%	-	-
			OHWM	2.34	2.14%				
			total	10.88	9.95%				

<i>Cleanup Sites</i>	<i>Permitted Facilities/HazMat</i>	<i>Outfalls</i>	<i>Parks</i>		<i>Centennial Trail Length</i>	<i>Recreation sites</i>	<i>Historic Districts</i>		<i>Historic Register Sites</i>	<i>Cultural Sites</i>
			<i>area</i>	<i>% of total</i>			<i>area</i>	<i>% of total</i>		
1	3	2	42.10	38.51%	-	none listed	-	-	none listed	Contact City of Spokane Preservation Office.

**City of Spokane Shoreline Master Program Update
Shoreline Characterization – Reach LC-4 Summary**

Summary

<i>Length (miles)</i>	<i>Shoreline Length</i>	<i>Area (acres)</i>				<i>Start</i>	<i>End</i>	<i>Reach Break Justification</i>
1.24	2.51	OHWM	20.9	Meander Belt ¹	61.8	Railroad Trestle	Inland Empire Way Bridge	Start: Beginning of small parcel agricultural land use.
		200' Buffer	60.8	200' Buffer	58.4	Lat: 47° 37' 30.85"	Lat: 47° 38' 21.64"	End: Beginning of Vinegar Flats area.
		total	81.7	Total ²	120.2	Lon: 117° 26' 10.75"	Lon: 117° 26' 25.92"	

1 – Meander Belt includes OHWM acreage.

2 – Used to calculate percentages.

Hydrological & Geologic Characterization

<i>Floodplain</i>		<i>PFC Rating-Proper Functioning Condition</i>		<i>PFC Rating-Functional at Risk</i>	
29.85	24.85%	0.12	9.60%	1.15	93.39%

<i>Lithology</i>	<i>area</i>	<i>% of reach</i>	<i>Geohazard</i>	<i>area</i>	<i>% of reach</i>
Sediment, unconsolidated, glaciolacustrine and outburst flood deposits	120.13	100.00%	geologic	52.31	43.54%
			soil - highly erodible	0.18	0.15%
			slope >30%	4.93	4.10%
			geologic & soil	2.34	1.95%
			geologic & slope	8.95	7.45%
			soil & slope	0.03	0.02%
			all	4.69	3.90%

Soil Characterization

<i>Soil Type</i>		<i>Acres</i>	<i>% of Reach</i>	<i>Erosion Hazard</i>	<i>Permeability</i>		<i>Hydrologic Group</i>	<i>Runoff Potential</i>	<i>Infiltration Rate</i>	<i>Soil Depth & Drainage</i>	<i>Texture</i>	<i>Water Transmission</i>
HhA	HARDESTY SILT LOAM	44.89	37.36%	slight	0.6-2	Moderate	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate
McB	MARBLE VARIANT SANDY LOAM	19.05	15.86%	slight	0.2-0.6	Moderately Slow	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate
Rh	RIVERWASH	48.95	40.75%		na	na	D	High	Very Slow	Shallow or Soils with a permanent high water table	Clay with high swelling potential	Very Slow
SzE	SPRINGDALE GRAVELLY LOAMY SAND	7.24	6.03%	severe	0.6-2	Moderate	A	Low	High	Deep - Well Drained to Excessively Drained	Sands or Gravel	High

Biological Characterization

<i>Wildlife Heritage Sites</i>	<i>Natural Heritage Species</i>	<i>area</i>	<i>% of total</i>	<i>Priority Species</i>	<i>area</i>	<i>% of total</i>	<i>Priority Habitat</i>	<i>area</i>	<i>% of total</i>
none listed	none listed			none listed			URBAN NATURAL OPEN SPACE	119.539	99.51%

<i>Wetlands</i>	<i>area</i>	<i>% of total</i>	<i>Ecological Rating</i>	<i>length</i>	<i>% of total</i>	<i>vegetation class</i>	<i>area</i>	<i>% of total</i>	<i>vegetation sample sites</i>	<i>area</i>	<i>% of total</i>	<i>% of vegetative cover that is native species</i>
	2.3		fair-good	0.24	9.45%	A	1.321493	1.10%	9	6.58	5.48%	59%
			poor-fair	2.31	91.97%	B	18.49061	15.39%				
						C	37.08157	30.87%				
						D						

Landuse & Cultural Characterization

<i>Landuse</i>	<i>area</i>	<i>% of total</i>	<i>Zoning</i>	<i>area</i>	<i>% of total</i>	<i>Development Impact Rating</i>	<i>shoreline Length</i>	<i>% of total</i>	<i>Building Footprint</i>	<i>area</i>	<i>% of total</i>
AG	47.18	39.27%	Neighborhood Retail Zone	0.15	0.13%	High Impact	2.31	91.97%	200 ft buffer	0.62	1.00%
Conservation OS	31.29	26.04%	One-Family Residence Zone	119.98	99.87%	Low Impact	0.24	9.45%	OHWM	0.42	0.71%
Mini Center	0.15	0.13%							total	1.03	0.86%
Potential OS	31.42	26.15%									
R 4-10	10.09	8.40%									

<i>Total Road Length</i>	<i>Total Railroad Length</i>	<i>Bridge Crossings</i>	<i>Impervious Surfaces</i>	<i>area</i>	<i>% of total</i>	<i>Bank Armoring</i>		<i>Artificial Fill</i>	
						<i>length</i>	<i>% of total</i>	<i>area</i>	<i>% of total</i>
15.03	1.50	1	200 ft buffer	3.39	2.83%	0.32	12.93%	-	-
			OHW	0.77	0.64%				
			total	4.16	3.46%				

<i>Cleanup Sites</i>	<i>Permitted Facilities/HazMat</i>	<i>Outfalls</i>	<i>Parks</i>		<i>Centennial Trail Length</i>	<i>Recreation sites</i>	<i>Historic Districts</i>		<i>Historic Register Sites</i>	<i>Cultural Sites</i>
			<i>area</i>	<i>% of total</i>			<i>area</i>	<i>% of total</i>		
none listed	none listed	1	6.18	5.14%	-	-	-	-	none listed	Contact City of Spokane Preservation Office.

**City of Spokane Shoreline Master Program Update
Shoreline Characterization – Reach LC-5 Summary**

Summary

<i>Length (miles)</i>	<i>Shoreline Length</i>	<i>Area (acres)</i>				<i>Start</i>	<i>End</i>	<i>Reach Break Justification</i>
0.57	1.24	OHWM	6.8	Meander Belt ¹	26.8	Inland Empire Way Bridge	W. 11 Ave Bridge	Start: End of Vinegar Flats historic area. More development potential/pressure
		200' Buffer	28.1	200' Buffer	27.1	Lat: 47° 38' 21.64"	Lat: 47° 38' 44.67"	End: Beginning of park land area.
		total	34.9	Total ²	53.8	Lon: 117° 26' 25.92"	Lon: 117° 26' 50.61"	

1 – Meander Belt includes OHWM acreage.

2 – Used to calculate percentages.

Hydrological & Geologic Characterization

<i>Floodplain</i>		<i>PFC Rating-Proper Functioning Condition</i>		<i>PFC Rating-Functional at Risk</i>	
15.51	28.81%	0.57	100.0%	0	0%

<i>Lithology</i>	<i>area</i>	<i>% of reach</i>	<i>Geohazard</i>	<i>area</i>	<i>% of reach</i>
Sediment, unconsolidated, glaciolacustrine and outburst flood deposits	53.84	100.00%	geologic	10.34	19.21%
			soil - highly erodible	0.11	0.20%
			slope >30%	7.34	13.64%
			geologic & soil		0.00%
			geologic & slope	3.25	6.04%
			soil & slope	0.02	0.04%
			all		0.00%

Soil Characterization

<i>Soil Type</i>		<i>Acres</i>	<i>% of Reach</i>	<i>Erosion Hazard</i>	<i>Permeability</i>		<i>Hydrologic Group</i>	<i>Runoff Potential</i>	<i>Infiltration Rate</i>	<i>Soil Depth & Drainage</i>	<i>Texture</i>	<i>Water Transmission</i>
HhA	HARDESTY SILT LOAM	0.05	0.10%	slight	0.6-2	Moderate	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate
HxC	HESELTIME EXTREMELY ROCKY COMPLEX	11.18	20.76%	slight	0.6-2	Moderate	D	High	Very Slow	Shallow or Soils with a permanent high water table	Clay with high swelling potential	Very Slow
McB	MARBLE VARIANT SANDY LOAM	24.79	46.05%	slight	0.2-0.6	Moderately Slow	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate
Rh	RIVERWASH	17.68	32.84%		na	na	D	High	Very Slow	Shallow or Soils with a permanent high	Clay with high	Very Slow

Soil Type		Acres	% of Reach	Erosion Hazard	Permeability		Hydrologic Group	Runoff Potential	Infiltration Rate	Soil Depth & Drainage	Texture	Water Transmission
										water table	swelling potential	
SoE	SPEIGLE VERY STONY SILT LOAM	0.14	0.26%	severe	0.6-2	Moderate	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate

Biological Characterization

Wildlife Heritage Sites	Natural Heritage Species	area	% of total	Priority Species	area	% of total	Priority Habitat	area	% of total
none listed	none listed	-	-	none listed	-	-	URBAN NATURAL OPEN SPACE	51.81698	96.26%

Wetlands	area	% of total	Ecological Rating	length	% of total	vegetation class	area	% of total	vegetation sample sites	area	% of total	% of vegetative cover that is native species
None	-	-	fair-good	1.16	93.69%	A	0.946608	1.76%	3	0.58	1.08%	20%
						B	4.785969	8.89%				
						C	9.498728	17.65%				
						D						

Landuse & Cultural Characterization

<i>Landuse</i>	<i>area</i>	<i>% of total</i>	<i>Zoning</i>	<i>area</i>	<i>% of total</i>	<i>Development Impact Rating</i>	<i>shoreline Length</i>	<i>% of total</i>	<i>Building Footprint</i>	<i>area</i>	<i>% of total</i>
AG	0.11	0.20%	One-Family Residence Zone	53.83	100%	High Impact	3.96	320.49%	200 ft buffer	1.43	5.33%
Conservation OS	11.00	20.43%							OHWM	1.33	4.93%
R 4-10	42.72	79.37%							total	2.76	5.13%

<i>Total Road Length</i>	<i>Total Railroad Length</i>	<i>Bridge Crossings</i>	<i>Impervious Surfaces</i>	<i>area</i>	<i>% of total</i>	<i>Bank Armoring</i>		<i>Artificial Fill</i>	
						<i>length</i>	<i>% of total</i>	<i>area</i>	<i>% of total</i>
0.72	0	2	200 ft buffer	4.72	8.77%	0.15	12.12%	2.736399	
			OHWM	3.52	6.55%				
			total	8.25	15.32%				

<i>Cleanup Sites</i>	<i>Permitted Facilities/HazMat</i>	<i>Outfalls</i>	<i>Parks</i>		<i>Centennial Trail Length</i>	<i>Recreation sites</i>	<i>Historic Districts</i>		<i>Historic Register Sites</i>	<i>Cultural Sites</i>
			<i>area</i>	<i>% of total</i>			<i>area</i>	<i>% of total</i>		
none listed	1	none identified	7.81	14.51%	0		0	0	none listed	Contact City of Spokane Preservation Office.

**City of Spokane Shoreline Master Program Update
Shoreline Characterization – Reach LC-6 Summary**

Summary

<i>Length (miles)</i>	<i>Shoreline Length</i>	<i>Area (acres)</i>				<i>Start</i>	<i>End</i>	<i>Reach Break Justification</i>
1.52	2.93	OHWM	23.6	Meander Belt ¹	78.7	W. 11 Ave Bridge	Confluence with Spokane River	Start: Beginning of park land area.
		200' Buffer	70.3	200' Buffer	63.3	Lat: 47° 38' 44.67"	Lat: 47° 39' 34.59"	End: Confluence with Spokane River.
		total	93.9	Total ²	142.0	Lon: 117° 26' 50.61"	Lon: 117° 27' 26.98"	

1 – Meander Belt includes OHWM acreage.

2 – Used to calculate percentages.

Hydrological & Geologic Characterization

<i>Floodplain</i>		<i>PFC Rating-Proper Functioning Condition</i>		<i>PFC Rating-Functional at Risk</i>	
48.07	33.85%	1.53	100.0%	-	-

<i>Lithology</i>	<i>area</i>	<i>% of reach</i>	<i>Geohazard</i>	<i>area</i>	<i>% of reach</i>
Sediment, unconsolidated, flood deposits, gravel	105.86	74.55%	geologic	43.83	30.87%
			soil - highly erodible	6.87	4.84%
			slope >30%	13.27	9.35%
Sediment, unconsolidated, glaciolacustrine and outburst flood deposits	36.12	25.44%	geologic & soil	5.16	3.63%
			geologic & slope	2.39	1.68%
			soil & slope	15.87	11.18%
			all	2.88	2.03%

Soil Characterization

<i>Soil Type</i>		<i>Acres</i>	<i>% of Reach</i>	<i>Erosion Hazard</i>	<i>Permeability</i>		<i>Hydrologic Group</i>	<i>Runoff Potential</i>	<i>Infiltration Rate</i>	<i>Soil Depth & Drainage</i>	<i>Texture</i>	<i>Water Transmission</i>
GgA	GARRISON GRAVELLY LOAM	0.08	0.05%	slight	0.6-2	Moderate	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate
McB	MARBLE VARIANT SANDY LOAM	84.10	59.23%	slight	0.2-0.6	Moderately Slow	B	-	Moderate	Moderately Deep - Moderately Well Drained to Well Drained	Moderately Fine to Moderately Coarse	Moderate
Rh	RIVERWASH	27.00	19.02%		na	na	D	High	Very Slow	Shallow or Soils with a permanent high water table	Clay with high swelling potential	Very Slow
SoE	SPEIGLE VERY STONY	6.56	4.62%	severe	0.6-2	Moderate	B	-	Moderate	Moderately Deep - Moderately Well	Moderately Fine to	Moderate

Soil Type		Acres	% of Reach	Erosion Hazard	Permeability		Hydrologic Group	Runoff Potential	Infiltration Rate	Soil Depth & Drainage	Texture	Water Transmission
	SILT LOAM									Drained to Well Drained	Moderately Coarse	
SxB	SPRINGDALE GRAVELLY SANDY LOAM- DEEP	0.02	0.02%	slight	0.2-0.6	Moderate ly Slow	A	Low	High	Deep - Well Drained to Excessively Drained	Sands or Gravel	High
SzE	SPRINGDALE GRAVELLY LOAMY SAND	24.22	17.06%	severe	0.6-2	Moderate	A	Low	High	Deep - Well Drained to Excessively Drained	Sands or Gravel	High

Biological Characterization

<i>Wildlife Heritage Sites</i>	<i>Natural Heritage Species</i>	<i>area</i>	<i>% of total</i>	<i>Priority Species</i>	<i>area</i>	<i>% of total</i>	<i>Priority Habitat</i>	<i>area</i>	<i>% of total</i>
FALCO PEREGRINUS (PEREGRINE FALCON)	none listed	-	-	none listed	-	-	URBAN NATURAL OPEN SPACE	141.37	99.56%

<i>Wetlands</i>	<i>area</i>	<i>% of total</i>	<i>Ecological Rating</i>	<i>length</i>	<i>% of total</i>	<i>vegetation class</i>	<i>area</i>	<i>% of total</i>	<i>vegetation sample sites</i>	<i>area</i>	<i>% of total</i>	<i>% of vegetative cover that is native species</i>
None	-	-	good fair-good	0.06 3.07	2.09% 104.53%	A	6.21607	4.38%	6	1.85	1.30%	41%
						B	12.28759	8.65%				
						C	29.59724	20.84%				
						D	1.147194	0.81%				

Landuse & Cultural Characterization

<i>Landuse</i>	<i>area</i>	<i>% of total</i>	<i>Zoning</i>	<i>area</i>	<i>% of total</i>	<i>Development Impact Rating</i>	<i>shoreline Length</i>	<i>% of total</i>	<i>Building Footprint</i>	<i>area</i>	<i>% of total</i>
Conservation OS	123.56	87.02%	One-Family Residence Zone	141.26	99.49%	High Impact	3.13	106.62%	200 ft buffer	0.00	0.00%
Open Space	15.62	11.00%	Limited Multifamily Residence Zone (R4)	0.73	0.51%				OHWL	0.24	0.37%
R 15+	0.73	0.52%							total	0.24	0.17%
R 4-10	2.07	1.46%									

<i>Total Road Length</i>	<i>Total Railroad Length</i>	<i>Bridge Crossings</i>	<i>Impervious Surfaces</i>	<i>area</i>	<i>% of total</i>	<i>Bank Armoring</i>		<i>Artificial Fill</i>	
						<i>length</i>	<i>% of total</i>	<i>area</i>	<i>% of total</i>
0.61	0.189576283	2	200 ft buffer	3.22	2.27%	0.74	25.10%	2.736399	
			OHWL	1.17	0.83%				
			total	4.40	3.10%				

<i>Cleanup Sites</i>	<i>Permitted Facilities/HazMat</i>	<i>Outfalls</i>	<i>Parks</i>		<i>Centennial Trail Length</i>	<i>Recreation sites</i>	<i>Historic Districts</i>		<i>Historic Register Sites</i>	<i>Cultural Sites</i>
			<i>area</i>	<i>% of total</i>			<i>area</i>	<i>% of total</i>		
none listed	none listed	2	98.49	69.37%	0.29	2	0.07	0.05%	none listed	Contact City of Spokane Preservation Office.

Appendix D

Vegetation Inventory

City of Spokane Shoreline Master Program Update

Vegetation Inventory

The vegetation inventory consisted of two distinct elements. The first was identifying shoreline vegetative zones, and the second was taking a detailed inventory, including species name, origin (native or non native) and percent cover, of sample sites that were representative of typical vegetative stands found in the vicinity of the sample site. This approach allowed us to efficiently characterize the study area by quantifying the amount of each vegetative community (e.g. riparian, upland), and identifying particular species found in the communities. The sample sites were also used to extrapolate the amount of native species found in each river reach. This inventory can be used as a baseline from which future changes to the vegetative communities, both amount and species composition, can be assessed.

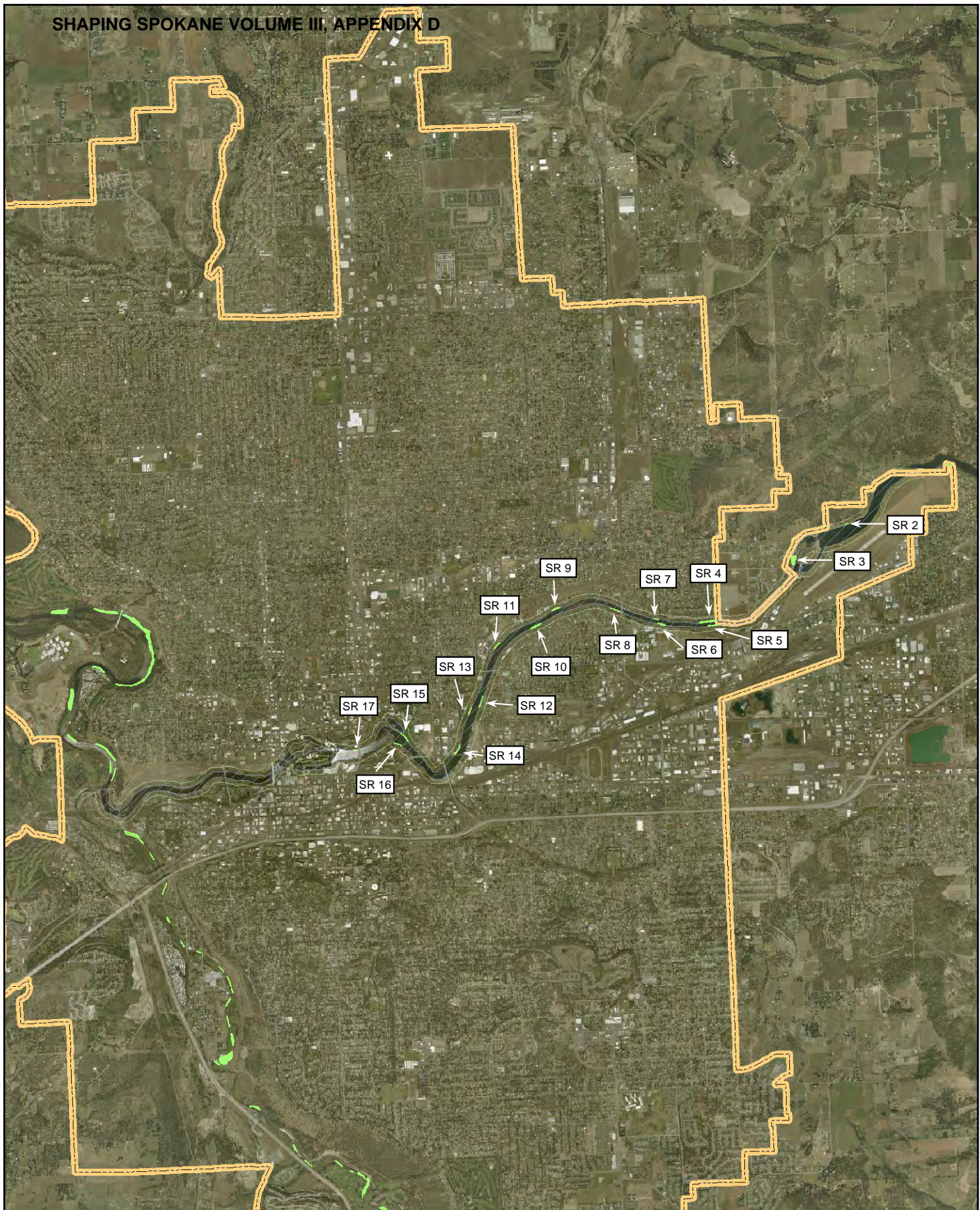
Shoreline Vegetative Zones

Shoreline vegetative zones were classified into the following groups:

- A – Riparian areas of recent stream erosion or deposition, un-vegetated, or poorly vegetated, or dominated by non-woody vegetation (commonly reed canary grass or common tansey).
- B – Riparian areas of stream sediments or bank materials dominated by broadleaf woody vegetation associated with wetter soils (commonly coyote willow, golden current, or box elder)
- C – Upland areas not influenced by riparian groundwater but dominated by drought-tolerant vegetation.
- D – Un-vegetated shore areas dominated by human impacts; constructed banks, bulkheads and areas with so much foot traffic that colonization by plants is difficult.

Sample Sites

At 63 locations where the shore was physically accessible, measurements of plant presence and percent cover were made in vegetation stands that are typical and representative of types of shoreline vegetation communities in the study area. In each of these representative stands the dominant plants were identified and a percent cover was estimated for each of the named species. The sum of the observed plant covers is typically greater than 100 percent because plant canopies overlap. For each species the following information is provided: 1) Scientific Name; 2) Common Name 3) US Fish and Wildlife Wetland Indicator Category, and 4) origin (native or non native). Data for plant origin was taken from the Plants of Washington Database from the Burke Museum of Natural History and Culture Herbarium at the University of Washington.



Legend

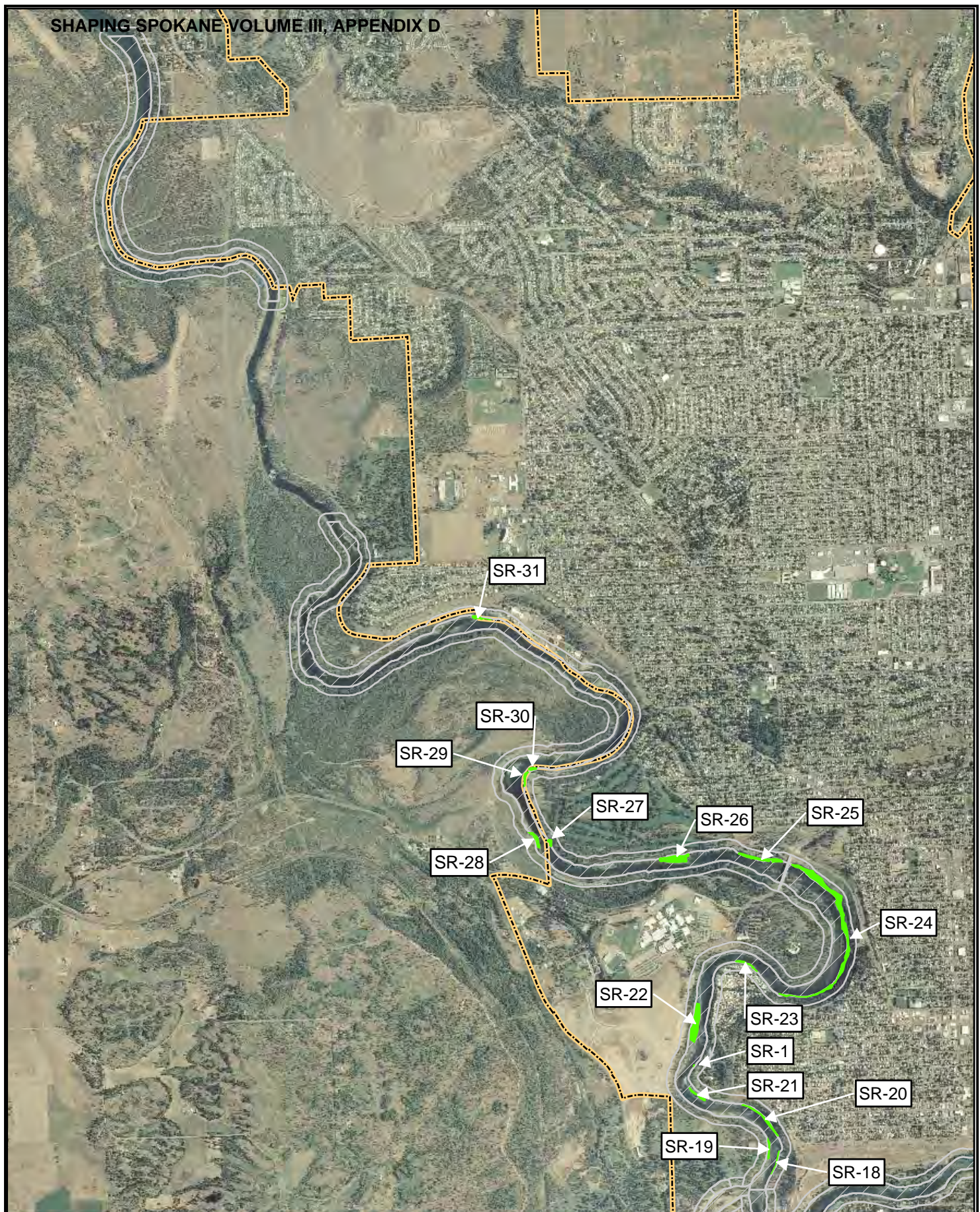
- Vegetation Sample Location
- Ordinary High Water Mark
- Shoreline Jurisdiction
- City Boundary







0 0.5 1 2 Miles

**Map 1 - Upper Spokane River
Vegetation Sampling Locations**

City of Spokane
Shoreline Master Plan
November 2006



Legend

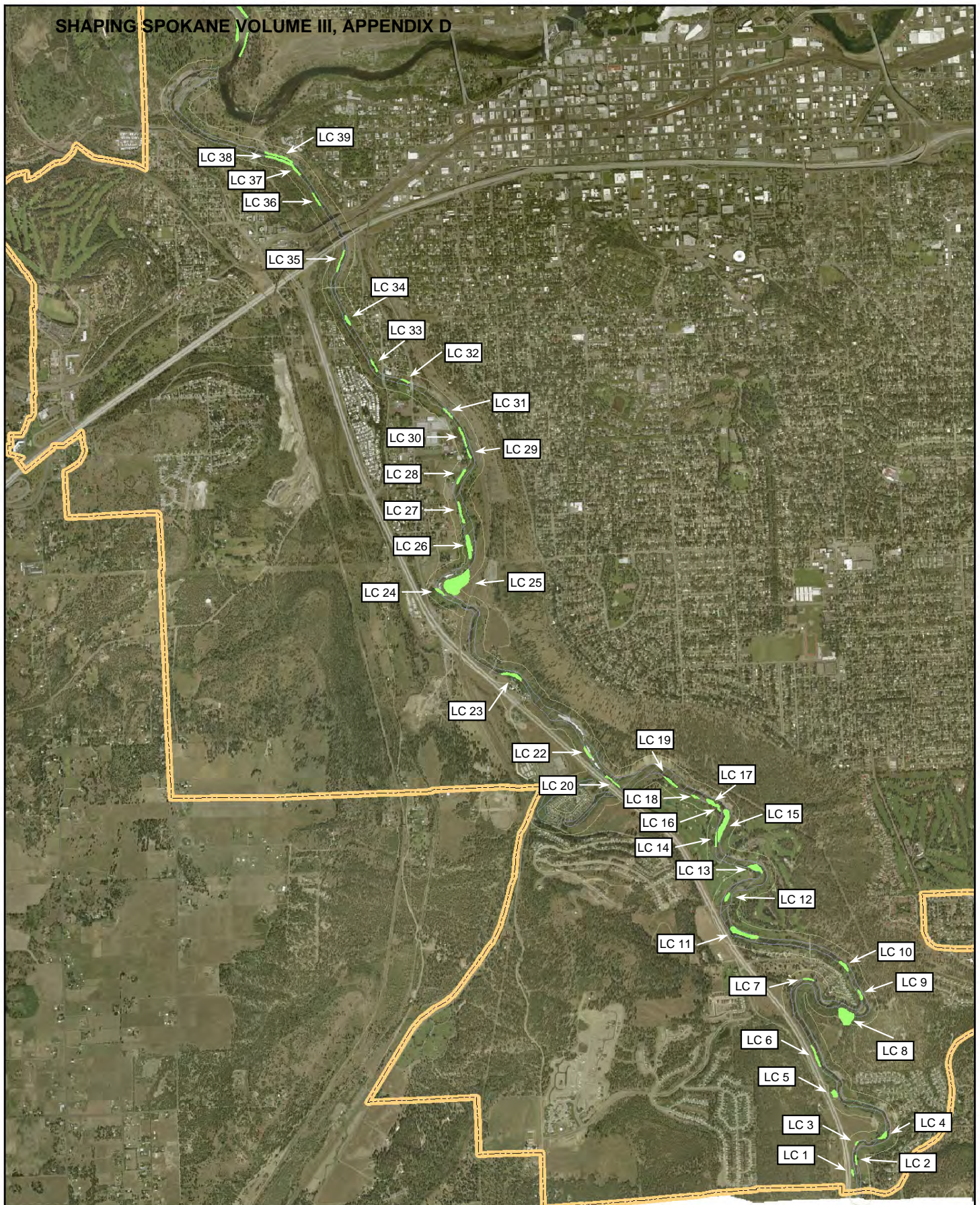
-  Vegetation Sample Location
-  Ordinary High Water Mark
-  Shoreline Jurisdiction
-  City Boundary



0 0.25 0.5 1
Miles

**Map 2 - Lower Spokane River
Vegetation Sampling Locations**

*City of Spokane
Shoreline Master Plan
November 2006*



Legend

- Vegetation Sample Location
- Ordinary High Water Mark
- Shoreline Jurisdiction
- City Boundary



0 0.25 0.5 1 Miles

**Map 3 – Latah Creek
Vegetation Sampling Locations**

City of Spokane
Shoreline Master Plan
November 2006

SHAPING SPOKANE VOLUME III, APPENDIX D

Flora Species

code	scientific name	common name	INDICATOR	NATIVE
ACGL	<i>Acer glabrum</i>	Rocky Mountain maple	FAC	yes
ACNE	<i>Acer negundo</i>	boxelder	FAC+	yes
ACRE	<i>Acroptilon repens</i>	Russian knapweed	NI	no
ALDO	<i>Allium douglasii</i>	Douglas's onion	FAC+	yes
ALPR	<i>Alopecurus pratensis</i>	meadow foxtail	FACW	no
ALTE	<i>Alnus tenuifolia</i>	thinleaf alder	FACW	yes
ANOF	<i>Anchusa officinalis</i>	common bugloss	NI	no
ARAB	<i>Artemesia absinthium</i>	absinth wormwood	NI	no
ARMI	<i>Arctium minus</i>	burdock	NI	no
ARUV	<i>Arctostaphylos uva-ursi</i>	bearberry	FACU-	yes
BERE	<i>Berberis repens</i>	creeping Oregon grape	NI	yes
BRTE	<i>Bromus tectorum</i>	cheat grass	NI	no
CEBI	<i>Centaurea biebersteinii</i>	spotted knapweed	NI	no
CEDI	<i>Centaurea diffusa</i>	diffuse knapweed	NI	no
CHJU	<i>Chondrilla juncea</i>	rush skeletonweed	NI	no
CIAR	<i>Cirsium arvense</i>	creeping thistle, Canada thistle	FACU+	no
CLLI	<i>Clematis ligusticifolia</i>	western virgins bower	FAC-	yes
COAR	<i>Convolvulus arvensis</i>	field bindweed, morning glory	NI	no
COMA	<i>Conium maculatum</i>	poison hemlock	FAC+	no
CRDO	<i>Crataegus douglasii</i>	Douglas hawthorn	FAC	yes
DAGL	<i>Dactylis glomerata</i>	orchard grass	FACU	no
DESE	<i>Deschampsia cespitosa</i>	tufted hairgrass	FACW	yes
ECLO	<i>Echinosystis lobata</i>	wild cucumber	NI	yes
ELCI	<i>Elymus cinereus</i>	basin wild-rye	FAC	
ELPAL	<i>Eleocharis palustris</i>	creeping spikerush	OBL	yes
ELPAU	<i>Eleocharis pauciflora</i>	few-flowered spike rush	OBL	yes
EPCI	<i>Epilobium ciliatum</i>	hairy willow-herb	FACW-	
EQAR	<i>Equisetum arvense</i>	field horsetail	FAC	yes
ERHE	<i>Eriogonum heracleiodes</i>	creamy buckwheat	NI	yes
EUES	<i>Euphorbia esula</i>	leafy spurge	NI	no
GAAP	<i>Galium aparine</i>	bedstraw	FACU	yes
HELA	<i>Heracleum lanatum</i>	cow parsnip	FAC+	yes
IMNO	<i>Impatiens noli-tangere</i>	western touch-me-not	FACW	yes
JUEF	<i>Juncus effusus</i>	soft rush	FACW	yes
LEVU	<i>Leucanthemum vulgare</i>	oxeye daisy	NI	no
LIDA	<i>Linaria dalmatica</i>	Dalmatian toadflax	NI	no
LOCO	<i>Lotus corniculatus</i>	birds foot trefoil	FAC	no
LODI	<i>Lomatium dissectum</i>	fern-leaved desert parsley	NI	yes
LOUT	<i>Lonicera utahensis</i>	Utah honeysuckle	FAC	yes
LUAN	<i>Lunaria annua</i>	Honesty	NI	no
LUSE	<i>Lupinus sericeus</i>	silky lupine	NI	yes
MAAQ	<i>Mahonia aquifolium</i>	tall Oregon grape	NI	yes

SHAPING SPOKANE VOLUME III, APPENDIX D

Flora Species

MEAL	Melilotus alba	white sweetclover	FACU	no
MEAR	Mentha arvensis	field mint	FACW-	yes
MYLA	Myosotis laxa	water forget-me-not	OBL	yes
ONAC	Onopordum acanthium	Scots thistle	NI	no
PHAR	Phalaris arundinacea	reed canarygrass	FACW	unk
PHLE	Philadelphus lewisii	mock orange	NI	yes
PHMA	Physocarpus malvaceus	mallow ninebark	NI	yes
PHPR	Phleum pratense	timothy grass	FAC-	no
PIPO	Pinus ponderosa	ponderosa pine	FACU-	yes
PLMA	Plantago major	common plantain	FACU-	no
POCU	Polygonum cuspidatum	Japanese knotweed	FACU	no
POTRE	Populus tremula	quaking aspen	FAC+	yes
POTRI	Populus trichocarpa	black cottonwood	FAC	yes
PRVI	Prunus virginiana	chokecherry	FACU	yes
PSDO	Pseudotsuga douglasii	douglas fir	FACU	yes
RARE	Ranunculus repens	Creeping buttercup	FACW	no
RASA	Raphanus sativus	radish	NI	no
RHGL	Rhus glabra	smooth sumac	NI	yes
RHPU	Rhamnus purshiana	cascara	FAC-	yes
RHRA	Rhus radicans (Toxicodendron)	Poison ivy/poison oak	FACU	yes
RIAU	Ribes aureum	golden current	FAC+	yes
RONU	Rosa nutkana	Nootka rose	FAC	yes
ROPS	Robinia pseudoacacia	black locust	NONE	no
ROWO	Rosa woodsii	woods rose	FACU	yes
RUDI	Rubus discolor	Himalayan blackberry	FACU	no
RULS	Rubus laciniatus	evergreen blackberry	FACU+	no
SACE	Sambucus cerulea	blue elderberry	FACU	yes
SADR	Salix drummondiana	Drummonds willow	FACW	yes
SAEX	Salix exigua	sandbar willow, coyote willow	OBL	yes
SALA	Salix lasiandra	Pacific willow	FACW+	yes
SARI	Salix rigida=S.mackenzieana	heart-leaf willow=Mackenzie willow	OBL	yes
SASC	Salix scoulerana	Scoulers willow	FAC	yes
SCMI	Scirpus microcarpus	small-fruited bulrush	OBL	yes
SCVA	Scirpus validus	softstem bulrush	OBL	yes
SIME	Silene menziesii	Menzies campion	FAC	yes
SMRA	Smilacena racemosa	false Solomons seal	FAC-	yes
SODU	Solanum dulcamara	climbing nightshade	FAC+	yes
SYAL	Symphoricarpos albus	snowberry	FACU	yes
TARA	Taraxacum officinale	dandelion	NI	no
TAVU	Tanacetum vulgare	common tansey	NI	no
TRDU	Tragopogon dubius	yellow salsify	NI	no
TYLA	Typha latifolia	broadleaf cattail	OBL	yes
ULAM	Ulmus americana	American elm	NI	no
URDI	Urtica dioica	stinging nettle	FAC+	yes

SHAPING SPOKANE VOLUME III, APPENDIX D

Flora Species

ULPU	Ulmus pumila	Siberian elm	NI	no
VETH	Verbascum thapsus	great mullein	NI	no
VIAM	Vicia americana	American purple vetch	FAC	yes

Appendix E

Supplemental Wildlife Information

Reach	Important Wildlife Communities	Representative Species	Nesting	Concentration	PHS Species	Locally Significant Species
SR-1	Bats, Neotrop Birds, Aquatic mammals; waterfowl; Herps	Myotis yumanensis, Hoary Bat, Silver-haired Bat; Red-wing Blackbird, Yellow Warbler, Willow Flycatcher, Common Yellowthroat, Song Sparrow, Vireos, Cedar Waxwing; Mink; Mallard, Canada Geese; Spotted frog	Myotis yumanensis, Hoary Bat, Silver-haired Bat; Yellow Warbler, Red-wing Blk Bird, Willow Flycatcher, Common yellowthroat, gray catbird, Vireos, Bullock's Oriole, Cedar Waxwing, Mallards	Neotropical Birds and Seasonal Waterfowl	Great-blue Heron, Seasonally Large Concentrations of Waterfowl and Common Mergansers, Roosting Bald Eagle, Aspen	Bald Eagle, Neotrop
	Comment: This reach is very important during winter for large rafts of common merganser. Also because of relatively good vegetation and the lack of development on the south side(left bank) this is a common place for moose to loaf. Just upriver from this reach is a bald eagle nest and this section is regularly used for foraging and roosting.					
SR-2	Bats, Neotrop Birds, Aquatic mammals; waterfowl; Herps	Myotis yumanensis; Red-wing Blackbird, Yellow Warbler, Willow Flycatcher, Common Yellowthroat, Song Sparrow, Cedar Waxwing; Mink; Mallard, Canada Geese; Spotted frog	Myotis yumanensis, Hoary Bat, Silver-haired Bat; Yellow Warbler, Red-wing Blk Bird, Willow Flycatcher, Common yellowthroat, gray catbird, Vireos, Bullock's Oriole, Cedar Waxwing, Mallards	Neotropical Birds, Seasonal Waterfowl, Common Mergansers, and Herps	Great-blue Heron, Seasonally Large Concentrations of Waterfowl and Common Mergansers, Roosting Bald Eagle	Bald Eagle, Osprey, Waterfowl, Bats, Neotropical and resident Birds
	Comment: Just below the dam is an important waterfowl area. Hundreds of waterfowl can congregate here at times. Also because of the cottonwood trees and shrubs along this reach, this is a good nesting area for many neotropical birds -- yellow warbler, willow flycatcher, black-headed grosbeak, western wood peewee, and northern oriole, and also bats. Throughout this reach waterfowl congregate. This stretch is one that could benefit from some restoration - with primary emphasis on south left bank that could result in some shoreline vegetation. Some augmentation with plantings of more cottonwoods would benefit nesting birds and bats.					
SR-3	Bats, Neotrop Birds, Aquatic mammals; waterfowl; Herps	Myotis yumanensis; Red-wing Blackbird, Yellow Warbler, Common Yellowthroat, Song Sparrow, Cedar Waxwing, N. Flicker; Mallard, Canada Geese	Yellow Warbler, Red-wing Blk Bird, Common yellowthroat, Cedar Waxwing, Mallards, N Flicker			Beaver, Bats and Neotropical and resident Birds, Bald Eagle, Neotrop

Reach	Important Wildlife Communities	Representative Species	Nesting	Concentration	PHS Species	Locally Significant Species
SR-3	Comment: Because of the large amount of trees and shrubs - although a high % is non-native - along this reach, this is a good nesting area for many neotropical birds -- yellow warbler, willow flycatcher, black-headed grosbeak, western wood peewee, and northern oriole, and also bats. Throughout this reach waterfowl congregate, especially in winter. This stretch could benefit from some restoration with plantings and some bio-erosion material in or instead of all the riprap found - with primary emphasis on south left bank that could result in some shoreline vegetation. Bats appear to use all of the bridges in this area to roost.					
SR-4	Bats, Neotrop Birds, Aquatic mammals; waterfowl; Herps	Myotis yumanensis; Red-wing Blackbird, Yellow Warbler, Common Yellowthroat, Song Sparrow, Cedar Waxwing, N. Flicker; Mallard, Canada Geese	Yellow Warbler, Red-wing Blk Bird, Cedar Waxwing, Mallards, N Flicker, Downy & Hairy Woodpecker. Osprey, Red-tailed Hawk			Bald Eagle, Bats and Neotropical and resident Birds
	Comment: Although this reach is heavily populated and impacted by development it does support many resident and neotropical birds because of the lush non-native vegetaton. However, many non-native starlings and english house sparrows dominate the landscape, along with congregations of urban geese and ducks. Bats appear to use all of the bridges in this area to roost.					
SR-5	Bats, Neotrop Birds, Aquatic mammals; waterfowl; Herps	Myotis yumanensis; Red-wing Blackbird, Yellow Warbler, Willow Flycatcher, Common Yellowthroat, Song Sparrow, Cedar Waxwing, Mallard, Canada Geese; Spotted frog	Myotis yumanensis, Hoary Bat, Silver-haired Bat; Yellow Warbler, Red-wing Blk Bird, Common yellowthroat, gray catbird, Vireos, Bullock's Oriole, Cedar Waxwing, Mallards, N Flicker, Downy & Hairy Woodpecker. Osprey, Red-tailed Hawk	Neotropical Birds, Seasonal Waterfowl	Peregrine Falcon, Great-blue Heron, Seasonally Large Concentrations of Waterfowl and Common Mergansers, Roosting Bald Eagle, Mink	Bald Eagle, Peregrine Falcon, Osprey, Red-tailed Hawks, Bats and Neotropical and resident Birds
	Comment: Below the maple street dam, this area just increases in wildlife diversity until it meets with Latah Creek. This confluence of 2 riparian systems makes this area very rich and productive. Many raptors, passerine birds and bats breed, forage and roost in this area because of the riparian systems and the associated vegetation. Mink has been seen just upriver of Latah. Peregrine nests on Sunset Bridge, Osprey nests along the banks, and bald eagles forage in this area. Many passerine birds breed in this area. Bats can be observed at night along this stretch. Bats appear to use all of the bridges in this area to roost.					

Reach	Important Wildlife Communities	Representative Species	Nesting	Concentration	PHS Species	Locally Significant Species
SR-6	Bats, Neotrop Birds, Aquatic mammals; waterfowl; Herps	Myotis yumanensis; Red-wing Blackbird, Yellow Warbler, Willow Flycatcher, Common Yellowthroat, Song Sparrow, Cedar Waxwing, Mallard, Canada Geese; Spotted frog	Myotis yumanensis, Hoary Bat, Silver-haired Bat; Yellow Warbler, Red-wing Blk Bird, Common yellowthroat, gray catbird, Vireos, Bullock's Oriole, Cedar Waxwing, Mallards, N Flicker, Downy & Hairy Woodpecker. Osprey, Red-tailed Hawk	Neotropical Birds	Great-blue Heron, Bald Eagle, Peregrine Falcon, Pileated Woodpecker, Mink	Bald Eagle, Peregrine Falcon, Osprey, Red-tailed Hawks, Mink, Bats, Pileated Woodpecker, and Neotropical and resident Birds
	Comment: Again, at its upper end, the confluence of 2 riparian systems makes this area very rich and productive. Many raptors, passerine birds and bats breed, forage and roost in this area because of the riparian systems and the associated vegetation. Mink has been seen just downriver of the Boone Street old Natatorium site. This bend in the river and its associated vegetation on the right bank (south side) - a northern mesic habitat type contains an exceptionally high diversity of birds in this area - Maurice Vial who lives in this area has recorded over a hundred species of birds in this reach. Merlins, Sharp-shinned Hawks, Cooper's Hawks have all been observed here. Osprey nests along the banks, and bald eagles forage in this area. Many passerine birds breed in this area. Some of the bare banks in this stretch could be enhanced with tree and shrub plantings.					
SR-7	Bats, Neotrop Birds, Aquatic mammals; waterfowl; Herps	Myotis yumanensis; Red-wing Blackbird, Yellow Warbler, Willow Flycatcher, Common Yellowthroat, Song Sparrow, Cedar Waxwing, Mallard, Canada Geese; Spotted frog	Myotis yumanensis, Hoary Bat, Silver-haired Bat; Yellow Warbler, Red-wing Blk Bird, Common yellowthroat, gray catbird, Vireos, Bullock's Oriole, Cedar Waxwing, Mallards, N Flicker, Downy & Hairy Woodpecker. Osprey, Red-tailed Hawk	Neotropical Birds, Waterfowl, Mergansers	Great-blue Heron, Bald Eagle, Wild Turkey, Pileated Woodpecker, Mink	Bald Eagle, Wild Turkey, Pileated Woodpecker, River Otter, Osprey, Red-tailed Hawks, Mink, Bats, Passerine Birds

Reach	Important Wildlife Communities	Representative Species	Nesting	Concentration	PHS Species	Locally Significant Species
	Comment: In this reach, the upland Ponderosa Pine forests has a large influence on the riparian system. This adds to the biodiversity in this reach. Many cavity nesters - woodpeckers, swallows, chickadees, nuthatches, owls can be seen and breed in this area. Reptiles and amphibians begin to show up for the first time downriver of the highly urbanized area - salamanders and frogs. Crayfish are abundant and probably because of this river otter have been observed. Again Osprey breed, forage and roost; bald eagle forage and roost. Some of the bare banks in this stretch could be enhanced with tree and shrub plantings.					
LC-1	Bats, Neotrop Birds, Raptors, Aquatic mammals	Waterfowl Yellow Warbler Red-winged blackbird Bank swallow Great-blue heron	Bank Swallow Belted Kingfisher Canada Goose Ring-necked pheasant	Bank Swallows, waterfowl	Mink, Wild Turkey	Otter, Mink, Wild Turkey, Belted Kingfisher, Neotrops
	Comment: This reach and just up river has regular occurrence of river otters. The danger in this area is the unstable banks and restoration in this area would be a big help to stream quality, riparian wildlife and associated upland species. More trees and shrubs would increase nesting birds.					
LC-2	Bats, Neotrop Birds, Raptors, Aquatic mammals	Myotis yumanensis Little & Big-brown Bat Silver-haired Bat Yellow Warbler	Bank Swallow Belted Kingfisher Canada Goose Ring-necked pheasant	Bank Swallows, waterfowl	Mink, Wild Turkey	Otter, Mink, Wild Turkey, Belted Kingfisher, Neotrops
	Comment: This reach and just up river has regular occurrence of river otters. The danger in this area is the unstable banks and restoration in this area would be a big help to stream quality, riparian wildlife and associated upland species. More trees and shrubs would increase nesting birds.					
LC-3	Bats, Neotrop Birds, Raptors, Aquatic mammals	Myotis yumanensis Little & Big-brown Bat Silver-haired Bat Yellow Warbler	Bank Swallow Belted Kingfisher Canada Goose Ring-necked pheasant	Bank Swallows, waterfowl		Otter, Mink, Wild Turkey, Belted Kingfisher, Neotrops
	Comment: This reach has more vegetation and stable banks, but still there are a number of unstable banks that restoration would					
LC-4	Bats, Neotrop Birds, Raptors, Aquatic mammals	Myotis yumanensis Little & Big-brown Bat Silver-haired Bat Yellow Warbler	Bank Swallow Belted Kingfisher Canada Goose Ring-necked pheasant	Waterfowl		Swallows, kingfisher, waterfowl
LC-5	Bats, Neotrop Birds, Raptors, Aquatic mammals	Myotis yumanensis Little & Big-brown Bat Silver-haired Bat	Bank Swallow Belted Kingfisher Canada Goose	White-throated Swifts (nesting), waterfowl	Bald Eagle, Peregrine Falcon	Osprey, White-throated Swifts, Bald Eagle, Peregrine

<i>Reach</i>	Important Wildlife Communities	Representative Species	Nesting	Concentration	PHS Species	Locally Significant Species
		Yellow Warbler	Ring-necked pheasant			falcon, Passerine
	Comment: This bottomland has a lot of non-native invasive weeds and could be improved with reseeding and planting of natives.					
LC-6	Bats, Neotrop Birds, Raptors, Aquatic mammals	Myotis yumanensis Little & Big-brown Bat Silver-haired Bat Yellow Warbler	Bank Swallow Belted Kingfisher Canada Goose Ring-necked pheasant	White-throated Swifts, waterfowl	Bald Eagle, Peregrine Falcon	Osprey, White-throated Swifts, Bald Eagle, Peregrine falcon, Passerine

August 8, 2006

Comments on the City of Spokane's Shoreline Master Plan by the Audubon Society of Spokane, Craig Corder, Board Member

Shoreline habitat along the Spokane River and Latah Creek is very important to birds. At least 175 different species of birds have been observed using this habitat in the City since 1980. Some species nest here, some winter here, and some rest and feed here during migration. A few species are present year-round. A checklist of these birds is also provided. Three of these birds, House Sparrow, Starling, and Rock Pigeon are not native to the United States and have had negative impacts on native birds.

Some of the habitat has been partially protected by parks, mostly the Riverside State Park. Some of the parks have been altered for recreational purposes which are usually detrimental for most native birds. The following comments are concerning areas outside the parks as they need the most protection.

While all habitats are important, the best areas are those that are large enough to provide places to feed, nest, and seek shelter from predators. For example, much of the Spokane River is limited to one row of trees along the river. It is a challenge for native birds to survive in such a narrow area. Having 200 feet of habitat back from shoreline would greatly enhance the chances of native birds to survive.

We have identified five locations along Latah Creek that we consider Important Bird Areas. They presently have substantial habitat for 200 feet from the shoreline. We request that every effort be made to save these areas for birds and other wildlife. Thank you for the opportunity to comment.

Area 1 is shown on URS's field map #LC 18.

It provides nesting areas for Bullock's Oriole, Song Sparrow and House Wrens among others. Picture below.



Area 2 is shown on field map #LC 17.
It provides a nice area for migrating birds to feed and rest.
Picture below.



Area 3 is shown on field map #LC 10

It provides nesting area for Eastern Kingbirds and Bank Swallows among others.

Picture below.



Area 4 is shown on field map #LC 8
It provides a good area for migrating sparrows.
Picture below.



Area 5 is shown on field map #LC 7

This nice stand of cottonwood provides nesting for Black-headed Grosbeaks and Warbling Vireos among others.

Picture below.



Birds of the Spokane River and Latah Creek within the City of Spokane
SHAPING SPOKANE VOLUME III, APPENDIX D

Includes habitat within 200 feet of the shoreline		8/8/2006	
<i>Common (should see in proper habitat).</i>		C	
<i>Uncommon (usually present in proper habitat, but might miss).</i>		U	
<i>Occasional (usually a few reports each year, sometimes irruptive, may be local).</i>		O	
<i>Rare (not seen most years, but more than 10 records for period since 1980).</i>		R	
<i>Vagrant (fewer than 10 records for period since 1980).</i>		V	
	Winter	Summer	Spring/Fall
Cackling Goose	O		O
Canada Goose	C	C	C
Tundra Swan			R
Wood Duck	R	O	U
Gadwall	R	O	U
Eurasian Wigeon	V		V
American Wigeon	O	U	U
Mallard	C	C	C
Blue-winged Teal		V	
Cinnamon Teal		O	O
Northern Shoveler		U	U
Northern Pintail	O		U
Green-winged Teal	O		O
Canvasback	O		U
Redhead	O	U	U
Ring-necked Duck	O	U	U
Greater Scaup	O		O
Lesser Scaup	O		U
Harlequin Duck	R		V
Surf Scoter			V
Bufflehead	C	O	C
Common Goldeneye	C		U
Barrow's Goldeneye	U		U
Hooded Merganser	U	O	U
Common Merganser	C	U	C
Red-breasted Merganser	V		
Ruddy Duck		O	U
Ring-necked Pheasant	O	O	O
Wild Turkey	U	U	U
California Quail	C	C	C
Common Loon			O
Pied-billed Grebe	O	O	O
Horned Grebe			O
Eared Grebe			O
Western Grebe			O
Double-crested Cormorant	O	U	U
Great Blue Heron	U	U	U
Turkey Vulture		O	O
Osprey		U	U
Bald Eagle	U	O	U
Northern Harrier	O		O
Sharp-shinned Hawk	U		U
Cooper's Hawk	U	O	U
Northern Goshawk	O		
Red-tailed Hawk	C	C	C
Rough-legged Hawk	O		
Golden Eagle	V		
American Kestrel	O	O	O
Merlin	U		O
Peregrine Falcon		R	R
Prairie Falcon	V		
American Coot	O	U	U
Killdeer	R	U	U
Greater Yellowlegs			O
Lesser Yellowlegs			O
Solitary Sandpiper			O
Spotted Sandpiper			O
Western Sandpiper			V
Least Sandpiper			V
Long-billed Dowitcher			V
Wilson's Snipe			O

Birds of the Spokane River and Latah Creek within the City of Spokane

SHAPING SPOKANE VOLUME III, APPENDIX D

	Winter	Summer	Spring/Fall
Franklin's Gull			V
Bonaparte's Gull			V
Mew Gull			R
Ring-billed Gull	U	U	U
California Gull		U	U
Black Tern			O
Rock Pigeon	C	C	C
Mourning Dove	U	C	C
Great Horned Owl	U	U	U
Common Nighthawk			O
Vaux's Swift			V
White-throated Swift		U	U
Black-chinned Hummingbird		U	U
Calliope Hummingbird			O
Rufous Hummingbird			O
Belted Kingfisher	O	O	O
Red-naped Sapsucker		O	O
Downy Woodpecker	U	U	U
Hairy Woodpecker	U	U	U
Black-backed Woodpecker	R	R	R
Northern Flicker	U	U	U
Pileated Woodpecker	O	O	O
Olive-sided Flycatcher			O
Western Wood-Pewee		U	U
Willow Flycatcher		U	U
Hammond's Flycatcher			O
Gray Flycatcher			O
Dusky Flycatcher			O
Pacific-slope Flycatcher			O
Say's Phoebe		O	O
Western Kingbird			O
Eastern Kingbird		U	U
Northern Shrike	O		
Cassin's Vireo			O
Warbling Vireo		O	O
Red-eyed Vireo			O
Steller's Jay	O		
Blue Jay	O		O
Clark's Nutcracker	O		
Black-billed Magpie	C	C	C
American Crow	C	C	C
Common Raven	U	U	U
Tree Swallow		O	U
Violet-green Swallow		O	U
N. Rough-winged Swallow		O	U
Bank Swallow		U	U
Cliff Swallow		U	U
Barn Swallow		U	U
Black-capped Chickadee	U	U	U
Mountain Chickadee	U	U	U
Red-breasted Nuthatch	U	U	U
White-breasted Nuthatch	U	U	U
Pygmy Nuthatch	U	U	U
Brown Creeper	O		O
Rock Wren		V	V
Canyon Wren		V	V
Bewick's Wren		U	U
House Wren		U	U
Winter Wren	U		U
Marsh Wren		O	O
American Dipper	U		O
Golden-crowned Kinglet	U		O
Ruby-crowned Kinglet			U
Western Bluebird			O
Mountain Bluebird			O
Townsend's Solitaire	O	R	O
Veery			R
Swainson's Thrush			R
Hermit Thrush	R		O
American Robin	O	U	U
Varied Thrush	R		O

Birds of the Spokane River and Latah Creek within the City of Spokane
SHAPING SPOKANE VOLUME III, APPENDIX D

	Winter	Summer	Spring/Fall
Gray Catbird		R	R
European Starling	C	C	C
American Pipit			O
Bohemian Waxwing	U		
Cedar Waxwing	U	U	U
Orange-crowned Warbler			U
Nashville Warbler			O
Yellow Warbler			U
Yellow-rumped Warbler			U
Townsend's Warbler			U
American Redstart			V
MacGillivray's Warbler			U
Common Yellowthroat			O
Wilson's Warbler			U
Yellow-breasted Chat			V
Western Tanager			U
Spotted Towhee			U
Chipping Sparrow		U	U
Savannah Sparrow			V
Song Sparrow	U	U	U
Lincoln's Sparrow			R
Swamp Sparrow			V
White-throated Sparrow			V
White-crowned Sparrow			U
Golden-crowned Sparrow			V
Dark-eyed Junco	C	U	U
Black-headed Grosbeak		U	U
Lazuli Bunting			O
Red-winged Blackbird	O	C	C
Western Meadowlark		O	O
Yellow-headed Blackbird		O	O
Brewer's Blackbird		U	U
Brown-headed Cowbird		U	U
Bullock's Oriole		U	U
Pine Grosbeak	O		
Cassin's Finch	O	O	O
House Finch	C	C	C
Red Crossbill	U	U	U
Common Redpoll	V		
Pine Siskin	U		
American Goldfinch	C	C	C
Evening Grosbeak	O		O
House Sparrow	C	C	C

Appendix F

Technical Advisory Committee Comments



STATE OF WASHINGTON
DEPARTMENT OF FISH AND WILDLIFE

2315 N Discovery Place • Spokane Valley, Washington 99216-1566 • (509) 892-1001 FAX (509) 921-2440

December 13, 2006

Shorelines Team
Planning Services Department
808 W. Spokane Falls Blvd.
Spokane, WA 99201-3329

Shorelines Team:

The Washington Department of Fish and Wildlife (WDFW) received the request for comments from members of the Shoreline Technical Advisory Committee on the Draft Shoreline Inventory Project. WDFW reviewed the document and would like to provide the following comments for consideration during preparation of a final draft.

In reviewing the document, WDFW has noticed data gaps under the following sections:

Native Aquatic and Shoreline Dependent Wildlife
Priority Habitats and Wildlife Corridors

The Shorelines Inventory process is intended to identify what the Shoreline Master Program is ultimately in place to protect. Under the SMP amendment rules: WAC 173.26.201 are the rules for Inventory. Sections that most apply are highlighted.

(c) Inventory shoreline conditions. *Gather and incorporate all pertinent and available information, existing inventory data and materials from state agencies, affected Indian tribes, watershed management planning, port districts and other appropriate sources.* Ensure that, whenever possible, inventory methods and protocols are consistent with those of neighboring jurisdictions and state efforts. The department will provide, to the extent possible, services and resources for inventory work. Contact the department to determine information sources and other relevant efforts. Map inventory information at an appropriate scale.

Local governments shall be prepared to demonstrate how the inventory information was used in preparing their local master program amendments.

Collection of additional inventory information is encouraged and should be

coordinated with other watershed, regional, or statewide inventory and planning efforts in order to ensure consistent methods and data protocol as well as effective use of fiscal and human resources. Local governments should be prepared to demonstrate that they have coordinated with applicable interjurisdictional shoreline inventory and planning programs where they exist. Two or more local governments are encouraged to jointly conduct an inventory in order to increase the efficiency of data gathering and comprehensiveness of inventory information. Data from interjurisdictional, watershed, or regional inventories may be substituted for an inventory conducted by an individual jurisdiction, provided it meets the requirements of this section.

WDFW was directly involved with the PFC work that was conducted in Latah Creek with the Spokane County Conservation District. Specifically, WDFW correlated wildlife species use with the various habitat types identified along the creek. To the best of my knowledge, WDFW was not directly involved with this work along the reaches of the Spokane River within the City limits. This information is missing from this document. It is neither in the text, nor in the attached Appendices B or C. It appears that at this point the only data that was consulted is the WDFW Priority Habitats and Species Data, including Wildlife Heritage Data. The WDFW Priority Habitat and Species data is not a comprehensive list. It includes only those habitats that are critical and declining, and those species that are State listed, or candidates for listing. The Final Shorelines Inventory document must incorporate Best Available Science and identify a comprehensive list of species. Some of this information has already been compiled and should be cited. Generic lists of species, such as “native wildlife includes osprey, eagle, mink, beaver, deer and more”, weaken the scientific integrity of the document. Instead, consider tapping into scientific sources and documenting information.

A great source to start with for information regarding riparian habitat function and associated wildlife use is *Wildlife of Riparian Habitats*, J. Boone Kauffman, Matthew Mahrt, Laura A. Mahrt, and W. Daniel Edge. In addition WDFW in Region 1 Headquarters is more than willing to assist with filling data gaps with local knowledge. The Wildlife Program biologists can easily put together comprehensive species lists for birds and wildlife species, while the Fish Program can assist with fish information, including fish density information. . Contact the Spokane County Conservation District to determine if there is additional data collected during the PFC work.

There has been a lot of focus on the construction of a whitewater park in the Spokane River. In reviewing the document WDFW noted that *angling* was not noted as an important recreational use in the river. Along with many other species of fish, the Spokane River contains a healthy population rainbow trout, including strains of native redband trout. The section of river below Monroe Street bridge contains the healthiest population of redband trout in the river. Due to its native status, this population of fish is of statewide significance. Along with the protection of the state’s fish and wildlife resources, the mandate of the WDFW is to provide and protect recreational opportunity. The excellent quality fish populations attract anglers to the entire river. Many anglers target the lower Spokane River. These anglers, many of them flyfishers, bring economic gain to the region. Many are local anglers, but others travel from around the state, or out


of state to fish for these native trout. These anglers are important constituents of the Washington Department of Fish and Wildlife. In all of the efforts to restore vitality downtown and bring the City of Spokane to the river, the importance of the populations of fish in the river and important user groups must not be overlooked.

The proposed whitewater park downtown at the Sandifur bridge threatens the native redband population. The proposed channel wide structure will block upstream migration of fish and the ability for fish to access the critical spawning habitat is above this point. The construction of the whitewater park as proposed will also impact the angler user group. This reach of the river is highly utilized by anglers and as WDFW pointed this out early on in the whitewater park process, and would like to reiterate this concern now. There is an apparent conflict of interest between a recreational water park and associated crowds of onlookers, and angling. Flyfishers often put in below Monroe Street and float the reach in pontoon boats. The type of whitewater park that is currently proposed would disrupt this use. There is most likely a beneficial way to construct a whitewater kayak park – one that protects fish populations, enhances and increases available macro-habitat, and provides an additional recreational benefit to the region.

WDFW agrees that the CMZ needs to be included in the SMPs. As the CMZ is the area that the river channel is likely to move to, shoreline protection should extend to these cover the habitat in these areas.

Thank you for consideration of these comments. The Washington Department of Fish and Wildlife looks forward to working with the City towards completion of the Final Shoreline Inventory Project and throughout the rewrite process of the Shoreline Master Program.

Sincerely,



Karin A. Divens
Area Habitat Biologist
(509) 892-1001 ext 323

cc: Mark Wachtel, RHPM
Doug Pineo, DOE
Chris Donley, District Fish Biologist
Howard Ferguson, District Wildlife Biologist

12-15-06

**Avista comments on Draft City of Spokane Shoreline Master Program Update
Inventory and Analysis**

Page 2.7, Section 2.3.1, 2nd paragraph.

The author mentions new developments elsewhere but fails to mention the new and proposed condominium developments on the north shore overlooking Upper Falls. These areas were and are open space and will be transformed into high density residential developments immediately overlooking the river. This type of development needs to be recognized, otherwise the document gives the reader a false perspectives about how development is taking place in the downtown area and that the only remaining open space is River Front Park. Similar references, such as the Kendall Yard Developments and Post Office conversion at Gonzaga, etc. are found in the document descriptions.

Page 4-1, Section 4.1, 1st paragraph in section, 2nd sentence.

The highest recorded daily mean flows are 49,000 cfs and the lowest are 50 cfs.

Page 4-1, Section 4.2, 1st paragraph in section, 2nd to last sentence.

What do you base your statement on that Post Falls Dam has the greatest impact of any of the river's dams, to the shorelines within the City of Spokane? High flows (flows above 5,000 cfs) are controlled by Coeur d'Alene Lake's natural outlet, not the dam and the low flows within the city are within the natural flow regime. Additionally, how do you contrast impacts due to the summer and fall flows released from Post Falls with the impacts associated with the Upriver Dam impoundment? One could question which one really is a greater impact. Perhaps some clarity would help here. On the other hand, it would be accurate to state that Post Falls Dam controls river flows during the summer and fall months, when flows are less than 5,000 cfs. You could also add that the Post Falls Dam increases flows from what would occur naturally at the lowest flow period; recognize the relicensing minimum flow proposals, and the watershed planning efforts to protect instream flows. Typically general statements of impact are not clear and are not usually substantiated.

Page 4-6, Section 4.2.1, last paragraph in section, last sentence.

Do you have a reference or cite for this sentence that would qualify the affects that gains and losses have?

Page 4-9, Section 4.2.5, 1st bullet.

Capitalize **Dam** in Little Falls dam.

Page 4-9, Section 4.2.5,

Include bullets that mention high density commercial and residential developments along the shoreline. They also have impacts to the shoreline beyond urban runoff, such as loss of open space, vegetation removal, change in, and possible loss of aesthetic views, etc.

Page 4-10, Section 4.2.5, last two bullets.

These seem to belong in the water quality section 4.2.4, except for the physical structure components of the two items. Perhaps I misread these??

Page 4-22, Section 4.5.3, 2nd bullet, 1st sentence.

Flows are variable due to operation of upstream dams and “natural” river flows would vary from approximately 200 cfs to over 45,000 cfs.

Page 4-28, Section 4.5.3, 2nd bullet, 1st sentence.

Flows are variable due to operation of upstream dams and “natural” river flows would vary from approximately 200 cfs to over 45,000 cfs., but ...

Page 4-30, Section 4.7, only paragraph in section, 2nd sentence.

Havermele should be spelled Havermale

Page 4-31, Section 4.7.1, 1st paragraph on page, last sentence.

New development in this reach will likely be redevelopment of existing properties. This is not the case, as evidenced by the Upper Falls Condos, which are currently being developed. They are replacing open space in the same manner as the other proposed condo situated between the credit union and the flour mill will do. Also, the other new developments that will take place in the area are not likely to be constructed on foot prints of existing buildings. This document should reflect how these new developments will affect the shoreline.

Page 4-31, Section 4.7.1, last paragraph on page.

Add Huntington Park as an access site along the south shore below Monroe Street Dam.

Page 4-33, Section 4.7.1, Critical Area Table.

The description for Frequently Flooded (3) is missing text at the end of Gonzaga.

Page 4-33, Section 4.7.2, last paragraph on page, 4th sentence.

“The hydrologic regime is controlled mostly by upriver dams.” Should be changed to read “The hydrologic regime is controlled by natural hydrology, surface and groundwater use, and upriver dams.”

Page 4-41, Section 4.8.3, last bullet.

Replace “Lower Falls Dam” with Monroe Street Dam”.

General comments pertaining to maps.

The Shoreline document would be better if specific maps pertaining to each river reach were included. The maps need to include the pertinent materials that are important and discussed within the document. For instance, if there is a certain section of riparian habitat corridor that should not be developed or disturbed, it needs to be listed in the document and on a map. This way the reader is provided both spatial and geographical

locations of sensitive areas. Otherwise, identifying areas, such as potential corridors to river riparian zones, sensitive riparian areas, etc. would likely be viewed as arbitrary and capricious.

This document assumes the reader knows where the City limits, Mission Street, Greene Street, Felts Field and the various dams are located. Without legal descriptions or maps which detail these areas it makes the document cumbersome to understand in regard to which areas can or can not be developed.

It appears that some of the areas designated as high quality function are also zoned for residential development. This is confusing, as are the areas designated as critical areas, potential wildlife corridors, and riparian habitat functions. To better explain the main points of these general comments, we have listed two examples where there is limited information.

Spokane River: Reach SR-1

The document discusses riparian vegetation, 13 acres of frequently flooded areas, and CMZ, however there is no map that delineates these. The reader would need to open a separate map and find this information. A map that shows the area of SR-1 and legal descriptions would be a helpful tool for the reader to assess the 13 acres that are frequently flooded, the CMZ, and those areas that have good riparian vegetation? The current GIS city maps are not helpful when trying to determine any of these areas because the scale is so small.

Page 4-15: The document provides little information about the location of a potential wildlife corridor connecting Beacon Hill to the river riparian zone. Please provide a map that shows where the potential corridor is and to which river riparian zone it would connect, to make sure there are no inconsistencies with existing land uses and zoning (like Upriver Drive.

Page 4-16: Include a map and show the location of the Boulder Beach area, Upriver Dam, Felts Field, and where the City of Spokane, City of Spokane Valley and Spokane County have jurisdiction within this reach.

Spokane River: Reach SR-2

This section says this area consists of 262 acres.

Page 4-20: Discusses notable plant communities between RM 78-79. Where is this and how does the reader know the location of these plant communities?

Page 4-21: Nine-three percent of this area is designated as urban Natural Open Space by WDFW. Please identify this area, as well as the above referenced corridor on a map. The document discusses RHA's that extend to the outer edge of the 100 year flood plain, the CMZ or 250 feet past the OHWM, etc. The frequently flooded areas states that there are 53 acres and lists some areas but doesn't include them on a map. Please identify these areas on a map.

There seems to be a general assumption that the reader knows where specific areas are located in respect to river miles, river reaches, features, etc. The existing maps are of little help when identifying the significant features and areas.

Avista has many existing utility corridors in and along the shoreline area. If shoreline development increases, more utilities will be required which, like existing utilities, will require scheduled and unscheduled maintenance, including periodic vegetation management. Detailed maps will greatly assist us in planning current and future utility maintenance and developmental needs.

SHAPING SPOKANE VOLUME III, APPENDIX D



"Coles, Eric"
<ecoles@spokanecity.org>
12/15/2006 04:09 PM

To <John_Patrouch@URSCorp.com>
cc "Wright, Jo Anne" <JWright@spokanecity.org>
bcc
Subject FW: STAC Review Deadline

From: Lindsay, Robert [mailto:RLindsay@spokanecounty.org]
Sent: Friday, December 15, 2006 4:03 PM
To: Coles, Eric; Shorelines
Cc: Falk, Jim; Brewer, Lloyd
Subject: RE: STAC Review Deadline

Eric,

Please accept my comments to the Draft SMP Shorelines Analysis on behalf of the Spokane County Utilities/Water Resources Section.

General comments:

1. The URS report is well written and the reach-specific analyses are presented in an understandable fashion.
2. Spokane County Water Resources agrees in concept to many, if not most of the reach-specific observations and opportunities for shoreline enhancement and restoration. Of particular note are projects related to providing for more conservation areas along shorelines and providing additional formal access. To the extent possible, early implementation of restoration projects with high short-term benefits in high-profile areas will aid in public awareness and acceptance. For example, informal access to shorelines appears to be a primary source of degradation/erosion in many locations. Development of more formal access areas to both river systems is needed to minimize future degradation/erosion of shorelines and will enhance user experiences.
3. Recognition of the interaction between local aquifers (i.e., Spokane Valley-Rathdrum Prairie Aquifer) and the rivers is important with respect to identification and protection of regional drinking water wellhead capture zones. Coordination of SMP goals, policies and regulations with the Wellhead Protection Act should include coordination with local Watershed Planning efforts and the local Aquifer Protection Council, which is currently evaluating wellhead capture zones in the Spokane and Spokane Valley region.
4. Pg 4-9, Stormwater and Urban Runoff - The statement "...stormwater discharged to drywells has little impact on the river..." is a broad statement and may not be correct. Additional assessment is needed.

Thank you for the opportunity to comment. Please contact me if you have any questions.

Rob Lindsay
Water Resources Manager
Spokane County Division of Utilities
1026 W. Broadway
Spokane WA 99260
Tel. 509-477-7259

SHAPING SPOKANE VOLUME III, APPENDIX D

Fax 509-477-4715

From: Coles, Eric [mailto:ecoles@spokanecity.org]

Sent: Friday, December 08, 2006 12:33 PM

To: dpin461@ecy.wa.gov; divenkad@dfw.wa.gov; hugo.flores@wadnr.gov; scott.robinson@wadnr.gov; chuck.Gulick@wadnr.gov; nancy.lopez@wadnr.gov; rene.wiley@parks.wa.gov; dave.brown@wa.usda.gov; Holderby, Steve; Horobiowski, Steve; walt-edelen@sccd.org; rich-Baden@sccd.org; jennifer-mccall@sccd.org; Lindsay, Robert; mfolsom@ewu.edu; robert.quinn@mail.ewu.edu; gmccormick@spokanevalley.org; dsmith@libertylakewa.gov; crossley@spokanetribe.com; randy@spokanetribe.com; Fitzgerald, Tonie; ldevereaux@cdatribe-nsn.gov; ramatt@cdatribe-NSN.gov; Verner, Mary; maryv@aimcomm.com; mpetersen@landscouncil.org; speed.Fitzhugh@avistacorp.com; Neff, Julie; Bressler, Taylor; Perry, Jeff; Brum, Teresa; Flinn, Aimee; Brewer, Lloyd; davide@spokanetribe.com

Subject: STAC Review Deadline

Dear STAC,

In order to formalize the review process for the final draft document and associated figures & appendices, a record of review is required from all STAC members. Please answer the question below, and/or respond with a set of comments:

1. [**YES** / **NO**] Did you have the opportunity to review the final draft of the SMP Shoreline Analysis? (Please bold or highlight your answer)

*If [**YES**] please send your comments via any of the methods identified below.

*If [**NO**] then please be advised that any comments must be returned by Friday, December 15, 2006

Please email, fax or mail your responses to:

Shorelines Team
Planning Services Department
808 W. Spokane Falls Blvd.
Spokane, WA 99201-3329
FAX (509) 625-6013
shorelines@spokanecity.org

Thank you for your continued participation in the Shoreline Technical Advisory Committee.

Eric Coles
Project Planner

SHAPING SPOKANE VOLUME III, APPENDIX D

Planning Services Department

**Spokane County Conservation District Comments
City of Spokane Shoreline Master Program Update**

December 2006

The following comments were solely on the Draft document. The appendices were not reviewed due to time constraints. Please contact Walt Edelen (509) 535-7274 with any questions regarding these comments.

1. The list of acronyms should be in alphabetical order. I think this would be easier to locate than just when it occurs in the document.
2. Page 1-3: Last paragraph indicates Latah Rd at RM 8.1. This should be Hatch Rd.
3. The Land Use Historical Summary developed by the consultant does not cite any references. This is unacceptable. Reference documents had to be utilized to write these summaries.
4. Page 2-4: How can it be stated that the impacts upriver and downriver have been relatively low? The dam had significant effects to the river. It effects flow and the amount of riparian vegetation. I believe that would constitute an impact. It may also be perceived that the shorelines were impacted by early agricultural fields and then development. The Centennial trail is an impact as well.
5. Page 2-4. When was original Sandifur bridge built
6. Page 2-4: Third paragraph refers to Latah Creek (Vinegar Flats) in a section designated to the Spokane River. This should be removed and placed in the next section.
7. Page 2-5; Last paragraph indicates that the 74 Expo left behind the Imax theatre, Opera house, Convention Center, Hotel. Is this correct for all of these? We weren't sure.
8. Page 2-6: First paragraph indicates the "Gonzaga river bend". This may be better indicated with a river mile marker.
9. Page 2-8: First paragraph under section 2.3.2. Latah Creek enters the city at Hatch Rd. Bridge, not Hatch Bridge.
10. Page 3-1: Fourth paragraph. It is Spokane County Conservation District, not Service.
11. Please be consistent when referring to the SCCD. Sometimes we are referenced to as the "County" in the document. We are not part of the County government.

We are a subdivision of the state. I believe it would be best to use our acronym to avoid confusion.

12. Page 3-5: We are not sure how the hyporheic Zone was assessed. It appears to be qualitatively.
13. Page 4-4: The Spokane County Proper Functioning Condition (PFC) should reference us as SCCD. This occurs again later on the page (last sentence. We are not the “County”).
14. Page 4-5: Replace County with SCCD in second paragraph.
15. Page 4-6: Section 4.2.2. Replace County with SCCD (first paragraph).
16. Page 4-6: I am not sure of the reference used for the NRCS. On the next page the plants refer to w willow black locust. I believe this is a misprint.
17. Page 4-9: Section 4.2.5. Now the dams are listed as major impacts to shorelines. Before they were not.
18. There is no description on how the reaches for the Spokane River and Latah Creek were delineated. What was the basis? Some of the reaches match the SCCD inventory. Apparently URS work used some of our delineations for some reaches, but not for others. This may change the ability to compare SCCD inventory data with URS data.
19. We like the URS approach for detailed inventory (built environment, etc.). This is very good information.
20. Page 4-22: Hyporheic is incorrectly spelled.
21. Page 4-22: Section 4.5.3. This reach is not the same one identified by the SCCD in 2005. The percentages used in this section are not specified in our document. This is liberal extrapolation of data that is not likely comparable due to reach differences. This tends to occur in other reaches as well. Caution should be used.
22. Page 4-32; Under Vegetation, the correct spelling is currant, not current.
23. It may be appropriate to utilize the scientific names of the plants to avoid any confusion to botanists. Either put them in italics or parentheses).
24. Page 4-41: It is noted that Reach SR-5 has conflicting ratings between URS and the SCCD. It must be noted that the definitions used for ecological functioning are defined differently. They can be compared side by side. The SCCD’s study was a rapid assessment protocol for almost two hundred river miles. URS had a different intent and project scale.

25. The reach delineation for SR-7 is inadequate. River miles should be used to avoid questions.
26. Page 5-4: The first paragraph ends with an improper reference. Is this referencing the planning unit or a particular document?
27. Page 5-5: Section 5.2.2 should read SCCD PFC study as used before. At least there should be one consistent manner for this.
28. Page 5-8: The delineation of reach LC-1 should utilize river miles to avoid confusion.
29. Page 5-12: Where did the percentages for the SCCD study come from? I can't find anywhere in the SCCD document that states 75% was fair and 43% was good for the reach identified by URS. Please note that the PFC inventory ratings are based on the entire reach identified by the SCCD. This cannot be manipulated by URS. Confusion and misinterpretation has obviously occurred. If URS would like to discuss and coordinate these ratings with our work, it is suggested they contact us for confirmation of information. Otherwise, the evaluation must be based on the same reaches (river miles).
30. Page 5-13: Where did the information come from for the water quality for this reach? There is direct indication that there is a fertilizer and pesticide problem in the creek at this reach. Did URS conduct monitoring? We would like to see the documentation of these problems and sources. Furthermore, on page 5-9 for this reach, URS stated that there were no locations of concern and no water quality impairment.

There is also indication that the sediment regime is burying potential spawning beds in this reach. WDFW has never indicated that there are potential spawning beds in this reach. In fact, most spawning areas would be much higher in watershed or in nearby tributaries. Where did this information come from?
31. Page 5-17: Again, the SCCD PFC work is improperly referenced and interpreted for this reach. URS cannot equitably compare the inventory work. According to PFC methodology, the hydrological function of this reach is considered proper. URS needs to read the definitions associated with this methodology. They would find that the reach, is indeed, properly functioning from a hydrological standpoint. Variability in flow does not constitute inadequate hydrological function.
32. Page 5-18: Again the comments about water quality and spawning beds. This is inappropriate without solid documentation of these issues. Observing the color of the water and making assumptions regarding sediment, pesticides, and fertilizers is highly inappropriate. The SCCD is very aware of the water quality issues in the creek. We have documentation that may be of use.

33. Page LC-2: Section 5.5.3. Natural restoration of reed canarygrass is a pipedream in the short-term. Reed canarygrass is extremely persistent and has been in the system for decades. Natural recruitment of woody species just doesn't happen. Active restoration is needed. It may take a hundred years to see any change.
34. Page 5-23: Section 5.6.2. The SCCD did not rate this reach as properly functioning. The SCCD reach 21-C, which may include the URS reach LC-3, was listed as functional at-risk with a downward trend.

Lloyd Brewer: City of Spokane

Please consider the attached comments:

1) Page 1, Section 1.1; 1st paragraph, last sentence
“area” should be “are”

2) PDF pg15; 1st sentence; Upriver Dam 1895; Pump Station 1907
Would be more accurate to state “Upriver Dam and river pump station (1894) and well pump station (1907)”

[PDF pg17 East West Arbor (legal settlement to shoreline appeal of Ag Trade Center)

3) PDF pg22, Section 3.1; Paragraph 2, 2nd Sentence
Should provide citations for “recent legal decisions”

4) PDF pg30, Section 4.1, Paragraph 2, last two sentences
Cowley Creek is a former surface water tributary which now reaches the river through underground piping. There is a small tributary to the Spokane River which comes in just west of the Stateline Highway Patrol Weight Station. I understand this intermittent stream is Cable Creek, which sources in Idaho, and is said to have flowed year round until it was dammed.

5) PDF pg30; pg 4-1; last paragraph, first sentence
“been” should be “be”

6) PDF pg35; pg 4-6; 1st full paragraph; 2nd sentence
See comment 4 and note that Scalan Creek enters the Spokane River from the South below Post Falls

7) PDF pg35; pg 4-6; 1st full paragraph; 4th sentence
The general concept here is accurate but more recent studies have been conducted which show that the relationship of water loss to the aquifer may not only be a function of river stage but also of water temperature. “Calculated monthly mean losses for a 7-mile reach of the river between the gages near Post Falls and Otis Orchards ranged from about 69 to 810 cubic feet per second during water years 2000-2001. Losses generally increased with increased stream flow. However, water loss from the river appeared to increase during the late summer when the water temperature in the Spokane River was at its warmest. This increased water loss is probably a result of lower water viscosity and consequent increased infiltration capacity produced by the higher water temperature.” (USGS Water Resources Investigations Report 03-4239 Caldwell & Bowers Oct 2003, pg. 41)

8) PDF pg36; pg 4-7; first bullet
Should “Willow Black Locust” be Willow, with a new bullet for Black Locust?

9) PDF pg36; pg 4-7; 2nd & 3rd paragraphs
These two paragraphs seem to be somewhat contradictory in terms of existing vegetation condition and impacts of non-native plants.

10) PDF pg37; pg 4-8; Metal Contamination; last sentence

Would probably be best to note that the Basin Commission is involved in developing cleanup plans to be done in Idaho, while Ecology and EPA make plans for cleanup in Washington. The Starr Road beach site just West of the State line was remediated this year.

11) PDF pg38; pg 4-8; PCB Contamination; last sentence

The Department of Ecology is in the process of developing a TMDL (total maximum daily load) allocation for the Spokane River for PCB's. In addition, this year (2006), they have overseen the capping of PCB sediments behind Upriver Dam and cleanup of contaminated sediments at Donkey Island by industrial, potentially-labile parties.

12) PDF pg37; pg 4-8; Dissolved Oxygen (DO); 2nd sentence
“(RM 799)” should be (RM 79.9)

13) PDF pg37; pg 4-8; Dissolved Oxygen (DO); 3rd sentence

A Total Maximum...has been agreed to...” should be changed to “A Total Maximum ...has been tentatively agreed to...”

14) PDF pg 38; pg 4-9; 1st bullet-Hydroelectric Dams; 3rd paragraph; 1st sentence

Would rewrite to say “ On the Eastern City limits, Upriver Dam impounds water creating a narrow lake (~105 acres) with a relatively stable water elevation. Upper Falls (~150 acres) and Monroe (~5 acres) are located in the center of Spokane.”

15) PDF pg38; pg 4-9; 2nd bullet -Transportation and Utilities; end of 1st paragraph and beginning of second

Would add “Transportation and utility corridors also serve a function of defining where and how impacts to the shoreline, and to river water quality will occur.” To the end of the 1st paragraph. Then amend and add to the 1st sentence in the second paragraph “Roads and bridges, as a result of traffic, generate noise, pollutants and require periodic maintenance, and result in disruption of the natural environment. Of course, dependant on design, they limit significant adverse environmental impacts by defining where and in what manner traffic, power, wastes, etc. will flow.”

16) PDF pg38; pg 4-9; 3rd bullet -Storm Drainage and Urban Runoff; sentence 2

“Within...discharged into bio-infiltration (208) swales and drywells...”

17) PDF pg40; pg 4-11; Section 4.4.1; Built Environment; last paragraph

“The north bank contains...” What about Upriver Park Camp Sekani?

18) PDF pg40; pg 4-11; Section 4.4.1; Built Structures/Impervious...; last paragraph on page

“The majority of stormwater in this area drains directly to the river.” I am curious about the basis of the previous statement - most of the stormwater facilities I know of in this area discharge to ground.

[PDF pg42; pg 4-14; first paragraph; inventory noted banks eroded on south side]

19) PDF pg47; pg 4-18; 1st paragraph; 1st two sentences

Rewrite to say: “The City Upriver Dam Complex is located along the South Bank and includes City Well Electric. The area between Upriver Dam and the Spokane Community College at Greene Street includes a few industrial facilities, newer local government facilities and open space. “

20) PDF pg47, pg 4-18; Section Built Structures/Impervious...; 1st paragraph; last sentence
There are 208 type swales in the area and there seems to be no acknowledgement of storm water percolation into the ground.

21) All occurrences of “City Electric Well” should be changed to “City’s Well Electric” as the name of the pump station is “Well Electric”.

22) PDF pg47; pg. 4-18; last paragraph on page; 2nd sentence
Replace “nearly to Argonne Road” with “just beyond Argonne Road, however this zone only intersects the river in two locations one near the well and another to the West of Argonne Road.”

23) PDF pg47; pg. 4-18; last paragraph on page; 3rd sentence
Replace sentence with: “This reach lies totally within the Aquifer Sensitive Area (a critical area) and has a number of technically defined wellhead capture areas intersecting it, including those originating in North Spokane.”

24) PDF pg47; pg. 4-18; last paragraph on page; last sentence
Replace sentence with: “The City does not currently have wellhead protection zoning based on the technically delineated capture areas. Regionally, regulation of these zones varies by land use regulator and in the manner the technical definitions have been derived. There are supporting policies and plans to regulate wellhead capture areas in the City.

25) PDF pg48; pg 4-19; Section Utilities (from previous pg.); following 1st paragraph on page
Insert: “County plans include a preferred Spokane River & Rebecca St. location for a mixing zone structure for the planned new County Wastewater Treatment Plant outfall. The County plant is to be located on the old Stockyards Property South of the River and Mission Street.”

26) PDF pg50; pg 4-21; Critical Areas Table; Aquifer Recharge
Add City of Spokane’s Hoffman Well Capture areas to the others listed here.

27) PDF pg62; pg 4-33; Section 4.7.2; Hydrologic; 3rd sentence from bottom of page
Change to: “At lower flows the hydrologic regime is controlled mostly by upriver dams and particularly by Post Falls Dam. At higher flows the regime is controlled by the natural restriction at the outlet of Lake Coeur d’Alene.”

28) PDF pg68; pg 4-39; Vegetation; last sentence
Please add an explanation as to why sample plots were not established in this reach.

29) PDF pg 69; pg 4-40; Critical Areas table; Aquifer Recharge
This area is within the Spokane/Rathdrum Prairie Aquifer Boundary and is within the Spokane Aquifer Sensitive Area - It should be identified as a Critical Area for Aquifer Recharge.

30) PDF pg 69; pg 4-40; Section 4.8.2; Hydrologic; last sentence

Change “upriver dam operations.” to “dam operations upriver.” This will help avoid confusion with the City’s Upriver Dam.

31) PDF pg. 74 ; pg 4-45; Access; first sentence
Change “each” to “reach”.

32) PDF pg75; pg 4-46; Critical Areas table; Aquifer Recharge
This area is within the Spokane/Rathdrum Prairie Aquifer Boundary and within the Spokane Aquifer Sensitive Area. It should be a Critical Aquifer Recharge Area.

33) PDFpg75; pg4-46; Section 4.9.2; Hydrologic; last sentence
Change “upriver dam operations” to “dam operations upriver”.

34) PDF pg79; pg 4-50; Utilities; 1st sentence
Add Airway Heights and Fairchild AFB to the list of communities served by the Spokane Wastewater Treatment Plant.

35) PDF pg79; pg 4-50; Utilities; last sentence of 1st paragraph
Replace “natural gas pipeline is located.” with “petroleum pipeline is located”.

36) PDF pg79; pg4-50; last sentence on page
Add to “The wastewater treatment plant is listed as a hazardous waste generator in Ecology’s database. These wastes have come from vehicle maintenance and water laboratory functions.

37) PDF pg81; pg 4-52; Critical Areas table; Aquifer Recharge
This area is within the Spokane/Rathdrum Prairie Aquifer Boundary and within the Spokane Aquifer Sensitive Area. It should be a Critical Aquifer Recharge Area.

38) PDF pg95; pg 5-11; Critical Areas table; Aquifer Recharge
As noted wellhead protection delineations have been modeled and mapped which extend into this reach. The aquifer(s) in this reach have not been well studied. At least to the extent it has currently been mapped as wellhead protection areas, it should be a Critical Aquifer Recharge Area.

39) PDF pg100; pg 5-16; Critical Areas table; Aquifer Recharge
A portion of this area is within the Spokane Aquifer Sensitive Area. As noted wellhead protection delineations have been modeled and mapped which extend into Qualchan Golf Course. The aquifer(s) in this reach have not been well studied. At least to the extent it has currently been mapped as an Aquifer sensitive area and as wellhead protection areas, it should be a Critical Aquifer Recharge Area.

40) PDF pg106; pg 5-22; & PDF pg 112; pg 5-28;& PDF pg118; pg 5-34; Critical Areas table; Aquifer Recharge
These areas are within the Spokane Aquifer Sensitive Area. As noted wellhead protection delineations have been modeled and mapped which extend into Qualchan Golf Course. The aquifer(s) in these reaches have not been well studied. At least to the extent it has currently been mapped as an Aquifer sensitive area and as wellhead protection areas, it should be a Critical Aquifer Recharge Area.

41) PDF pg123; pg 5-39; Critical Areas table; Aquifer Recharge

This area is partially within the Spokane/Rathdrum Prairie Aquifer Boundary and completely within the Spokane Aquifer Sensitive Area. In addition wellhead protection delineations have been modeled which run through this area. It should be a Critical Aquifer Recharge Area.

Thank you for the opportunity to comment.

Lloyd Brewer
625-6968

**City of Spokane Planning Department
Shorelines Master Program Update – Inventory and Analysis Report
Response to Shorelines Technical Advisory Committee Comments**

Lloyd Brewer – City of Spokane, Manager, Environmental Programs

Document Location	Comment	Response
1) Page 1, Section 1.1; 1 st paragraph, last sentence	“area” should be “are”	Corrected.
2) PDF pg15; 1 st sentence; Upriver Dam 1895; Pump Station 1907	Would be more accurate to state “Upriver Dam and river pump station (1894) and well pump station (1907)”	Comment incorporated.
	[PDF pg17 East West Arbor (legal settlement to shoreline appeal of Ag Trade Center)	Corrected.
3) PDF pg22, Section 3.1; Paragraph 2, 2 nd Sentence	Should provide citations for “recent legal decisions”	Citation added.
4) PDF pg30, Section 4.1, Paragraph 2, last two sentences	Cowley Creek is a former surface water tributary which now reaches the river through underground piping. There is a small tributary to the Spokane River which comes in just west of the Stateline Highway Patrol Weight Station. I understand this intermittent stream is Cable Creek, which sources in Idaho, and is said to have flowed year round until it was dammed.	The word permanent was added to read “From the source of the river at Lake Coeur d’Alene to the confluence of Latah Creek, there are no <i>permanent</i> tributaries providing inputs to the river system”. This is noted in the WRIA 55/57 Draft Watershed Management Plan, June 2005.
5) PDF pg30; pg 4-1; last paragraph, first sentence	“been” should be “be”	Corrected.
6) PDF pg35; pg 4-6; 1 st full paragraph; 2 nd sentence	See comment 4 and note that Scalan Creek enters the Spokane River from the South below Post Falls	The word permanent was added to read “There are no <i>permanent</i> tributaries associated with the Spokane River upstream of the City.” This statement is noted in the WRIA 55/57 Draft Watershed Management

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		Plan, June 2005.
7) PDF pg35; pg 4-6; 1 st full paragraph; 4 th sentence	The general concept here is accurate but more recent studies have been conducted which show that the relationship of water loss to the aquifer may not only be a function of river stage but also of water temperature. “Calculated monthly mean losses for a 7-mile reach of the river between the gages near Post Falls and Otis Orchards ranged from about 69 to 810 cubic feet per second during water years 2000-2001. Losses generally increased with increased stream flow. However, water loss from the river appeared to increase during the late summer when the water temperature in the Spokane River was at its warmest. This increased water loss is probably a result of lower water viscosity and consequent increased infiltration capacity produced by the higher water temperature.” (USGS Water Resources Investigations Report 03-4239 Caldwell & Bowers Oct 2003, pg. 41)	Agree with comment. The statement made in the inventory is correct and the comment is a level of detail not needed for the purposes of the report.
8) PDF pg36; pg 4-7; first bullet	Should “Willow Black Locust” be Willow, with a new bullet for Black Locust?	Corrected.
9) PDF pg36; pg 4-7; 2 nd & 3 rd paragraphs	These two paragraphs seem to be somewhat contradictory in terms of existing vegetation condition and impacts of non-native plants.	Agreed. Reviewed and combined paragraphs to provide clarification.
10) PDF pg37; pg 4-8; Metal Contamination; last sentence	Would probably be best to note that the Basin Commission is involved in developing cleanup plans to be done in Idaho, while Ecology and EPA make plans for cleanup in Washington. The Starr Road beach site just West of the State line was remediated this year.	Comment incorporated.
11) PDF pg38; pg 4-8; PCB Contamination; last sentence	The Department of Ecology is in the process of developing a TMDL (total maximum daily load) allocation for the Spokane River for PCB’s. In addition, this year (2006), they have overseen the capping of PCB sediments behind Upriver Dam and cleanup of contaminated sediments at Donkey Island by industrial, potentially-labile parties.	Comment incorporated.

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12) PDF pg37; pg 4-8; Dissolved Oxygen (DO); 2 nd sentence	“(RM 799)” should be (RM 79.9)	Corrected.
13) PDF pg37; pg 4-8; Dissolved Oxygen (DO); 3 rd sentence	A Total Maximum...has been agreed to...” should be changed to “A Total Maximum ...has been <u>tentatively</u> agreed to...”	Comment incorporated.
14) PDF pg 38; pg 4-9; 1 st bullet-Hydroelectric Dams; 3 rd paragraph; 1 st sentence	Would rewrite to say “ On the Eastern City limits, Upriver Dam impounds water creating a narrow lake (~105 acres) with a relatively stable water elevation. Upper Falls (~150 acres) and Monroe (~5 acres) are located in the center of Spokane.”	Comment incorporated.
15) PDF pg38; pg 4-9; 2 nd bullet -Transportation and Utilities; end of 1 st paragraph and beginning of second	Would add “Transportation and utility corridors also serve a function of defining where and how impacts to the shoreline, and to river water quality will occur.” To the end of the 1 st paragraph. Then amend and add to the 1 st sentence in the second paragraph “Roads and bridges, <u>as a result of traffic</u> , generate noise, pollutants and require periodic maintenance, and result in disruption of the natural environment. <u>Of course, dependant on design, they limit significant adverse environmental impacts by defining where and in what manner traffic, power, wastes, etc. will flow.</u> ”	Revised to say: <ul style="list-style-type: none"> • Transportation and Utilities Transportation and utility corridors are located parallel to the river and cross the river at many locations. Transportation and utility corridors intersecting the shoreline area have impacts on shoreline function, both during construction, operation, and for maintenance. <p>Roads and bridges, as a result of traffic, generate noise, pollutants and require periodic maintenance, and result in disruption of the natural environment. In an urban setting, with appropriate design and location, roads and bridges can provide a means to limit significant adverse environmental impacts while providing needed transportation and utility functions.</p>
16) PDF pg38; pg 4-9; 3 rd bullet -Storm Drainage and Urban Runoff; sentence 2	“Within...discharged into <u>bio-infiltration (208) swales</u> and drywells...”	Comment incorporated.
17) PDF pg40; pg 4-11; Section 4.4.1; Built	“The north bank contains...” What about Upriver Park Camp Sekani?	Added comment mentioning Camp Sekani. Note that it is not within the City limits or within the shoreline

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Environment; last paragraph		jurisdiction.
18) PDF pg40; pg 4-11; Section 4.4.1; Built Structures/Impervious...; last paragraph on page	“The majority of stormwater in this area drains directly to the river.” I am curious about the basis of the previous statement - most of the stormwater facilities I know of in this area discharge to ground.	It appears that Upriver Drive and the CT drain towards the river during high frequency storm events.
	[PDF pg42; pg 4-14; first paragraph; inventory noted banks eroded on south side]	Added a statement that localized areas of erosion were noted during the field inventory.
19) PDF pg47; pg 4-18; 1 st paragraph; 1 st two sentences	Rewrite to say: “The City Upriver Dam Complex is located along the South Bank and includes City Well Electric. The area between Upriver Dam and the Spokane Community College at Greene Street includes a few industrial facilities, newer local government facilities and open space. “	Comment Incorporated.
20) PDF pg47; pg 4-18; Section Built Structures/Impervious...; 1 st paragraph; last sentence	There are 208 type swales in the area and there seems to be no acknowledgement of storm water percolation into the ground.	Sentence changed to add bio-infiltration(208) swales. “Stormwater in this area either drains to <i>bio-infiltration (208) swales</i> , drywells or directly to the river. “
21)	All occurrences of “City Electric Well” should be changed to “City’s Well Electric” as the name of the pump station is “Well Electric”.	Corrected.
22) PDF pg47; pg. 4-18; last paragraph on page; 2 nd sentence	Replace “nearly to Argonne Road” with “just beyond Argonne Road, however this zone only intersects the river in two locations one near the well and another to the West of Argonne Road.”	Comment incorporated.
23) PDF pg47; pg. 4-18; last paragraph on page; 3 rd sentence	Replace sentence with: “This reach lies totally within the Aquifer Sensitive Area (a critical area) and has a number of technically defined wellhead capture areas intersecting it, including those originating in North Spokane.”	Comment incorporated.
24) PDF pg47; pg. 4-18; last paragraph on page; last sentence	Replace sentence with: “The City does not currently have wellhead protection zoning based on the technically delineated capture areas. Regionally, regulation of these zones varies by land use regulator and in the manner the technical definitions have been derived.	Comment incorporated.

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	There are supporting policies and plans to regulate wellhead capture areas in the City.	
25) PDF pg48; pg 4-19; Section Utilities (from previous pg.); following 1 st paragraph on page	Insert: “County plans include a preferred Spokane River & Rebecca St. location for a mixing zone structure for the planned new County Wastewater Treatment Plant outfall. The County plant is to be located on the old Stockyards Property South of the River and Mission Street.”	Comment incorporated.
26) PDF pg50; pg 4-21; Critical Areas Table; Aquifer Recharge	Add City of Spokane’s Hoffman Well Capture areas to the others listed here.	Comment incorporated.
27) PDF pg62; pg 4-33; Section 4.7.2; Hydrologic; 3 rd sentence from bottom of page	Change to: “At lower flows the hydrologic regime is controlled mostly by upriver dams and particularly by Post Falls Dam. At higher flows the regime is controlled by the natural restriction at the outlet of Lake Coeur d’Alene.”	Comment incorporated. Avista also made a similar comment.
28) PDF pg68; pg 4-39; Vegetation; last sentence	Please add an explanation as to why sample plots were not established in this reach.	The following comment added – “Access to the shoreline in this reach was hindered by private property and steep slopes, therefore sample plots were not established in this reach.
29) PDF pg 69; pg 4-40; Critical Areas table; Aquifer Recharge	This area is within the Spokane/Rathdrum Prairie Aquifer Boundary and is within the Spokane Aquifer Sensitive Area - It should be identified as a Critical Area for Aquifer Recharge.	Comment incorporated.
30) PDF pg 69; pg 4-40; Section 4.8.2; Hydrologic; last sentence	Change “upriver dam operations.” to “dam operations upriver.” This will help avoid confusion with the City’s Upriver Dam.	Comment incorporated.
31) PDF pg74 ; pg 4-45; Access; first sentence	Change “each” to “reach”.	Corrected.
32) PDF pg75; pg 4-46; Critical Areas table; Aquifer Recharge	This area is within the Spokane/Rathdrum Prairie Aquifer Boundary and within the Spokane Aquifer Sensitive Area. It should be a Critical Aquifer Recharge Area.	Comment incorporated.

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33) PDFpg75; pg4-46; Section 4.9.2; Hydrologic; last sentence	Change “upriver dam operations” to “dam operations upriver”.	Comment incorporated.
34) PDF pg79; pg 4-50; Utilities; 1 st sentence	Add Airway Heights and Fairchild AFB to the list of communities served by the Spokane Wastewater Treatment Plant.	Comment incorporated.
35) PDF pg79; pg 4-50; Utilities; last sentence of 1 st paragraph	Replace “natural gas pipeline is located.” with “petroleum pipeline is located”.	Corrected.
36) PDF pg79; pg4-50; last sentence on page	Add to “The wastewater treatment plant is listed as a hazardous waste generator in Ecology’s database. These wastes have come from vehicle maintenance and water laboratory functions.	Comment incorporated.
37) PDF pg81; pg 4-52; Critical Areas table; Aquifer Recharge	This area is within the Spokane/Rathdrum Prairie Aquifer Boundary and within the Spokane Aquifer Sensitive Area. It should be a Critical Aquifer Recharge Area.	Comment incorporated.
38) PDF pg95; pg 5-11; Critical Areas table; Aquifer Recharge	As noted wellhead protection delineations have been modeled and mapped which extend into this reach. The aquifer(s) in this reach have not been well studied. At least to the extent it has currently been mapped as wellhead protection areas, it should be a Critical Aquifer Recharge Area.	Comment incorporated.
39) PDF pg100; pg 5-16; Critical Areas table; Aquifer Recharge	A portion of this area is within the Spokane Aquifer Sensitive Area. As noted wellhead protection delineations have been modeled and mapped which extend into Qualchan Golf Course. The aquifer(s) in this reach have not been well studied. At least to the extent it has currently been mapped as an Aquifer sensitive area and as wellhead protection areas, it should be a Critical Aquifer Recharge Area.	Comment incorporated.
40) PDF pg106; pg 5-22; & PDF pg 112; pg 5-28;& PDF pg118; pg 5-34; Critical Areas table; Aquifer Recharge	These areas are within the Spokane Aquifer Sensitive Area. As noted wellhead protection delineations have been modeled and mapped which extend into Qualchan Golf Course. The aquifer(s) in these reaches have not been well studied. At least to the extent it has currently been mapped as an Aquifer sensitive area and as	Comment incorporated.

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	wellhead protection areas, it should be a Critical Aquifer Recharge Area.	
41) PDF pg123; pg 5-39; Critical Areas table; Aquifer Recharge	This area is partially within the Spokane/Rathdrum Prairie Aquifer Boundary and completely within the Spokane Aquifer Sensitive Area. In addition wellhead protection delineations have been modeled which run through this area. It should be a Critical Aquifer Recharge Area.	Comment incorporated.

Avista Utilities Comment Response (12/15/06)

Document Location	Comment	Response
Page 2.7, Section 2.3.1, 2 nd paragraph.	The author mentions new developments elsewhere but fails to mention the new and proposed condominium developments on the north shore overlooking Upper Falls. These areas were and are open space and will be transformed into high density residential developments immediately overlooking the river. This type of development needs to be recognized, otherwise the document gives the reader a false perspectives about how development is taking place in the downtown area and that the only remaining open space is River Front Park. Similar references, such as the Kendall Yard Developments and Post Office conversion at Gonzaga, etc. are found in the document descriptions.	Revised section to include noting recent developments in the falls area.
Page 4-1, Section 4.1, 1 st paragraph in section, 2 nd sentence	The highest recorded daily mean flows are 49,000 cfs and the lowest are 50 cfs.	Comment incorporated.
Page 4-1, Section 4.2, 1 st paragraph in section, 2 nd to last sentence.	What do you base your statement on that Post Falls Dam has the greatest impact of any of the river's dams, to the shorelines within the City of Spokane? High flows (flows above 5,000 cfs) are controlled by Coeur d'Alene Lake's natural outlet, not the dam and the low flows within the city are within the natural flow regime. Additionally, how do you contrast impacts due to the summer and fall flows released from Post Falls with the impacts associated with the Upriver Dam impoundment? One could question which one really is a greater impact. Perhaps some clarity would help here. On the other hand, it would be accurate to state that Post Falls Dam controls river flows during the summer and fall months, when flows are less than 5,000 cfs. You could also add that the Post Falls Dam increases flows from what would occur naturally at the lowest flow period; recognize the relicensing minimum flow proposals, and the watershed planning efforts to protect instream flows. Typically general statements of impact are not clear and are not usually substantiated.	Agree with comment. Simplified statement to say that Post Falls Dam controls river flows in the summer and fall. Note that the WRIA 55/57 Draft Watershed Management Plan states that the Post Falls Dam has the greatest impact on the hydrograph of the Spokane River.
Page 4-6, Section 4.2.1, last paragraph in section, last	Do you have a reference or cite for this sentence that would qualify the affects that gains and losses have?	This is a conclusion reached by URS based on various reports including the USGS report and the EWU report

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sentence		referenced earlier.
Page 4-9, Section 4.2.5, 1 st bullet.	Capitalize Dam in Little Falls dam.	Comment incorporated.
Page 4-9, Section 4.2.5,	Include bullets that mention high density commercial and residential developments along the shoreline. They also have impacts to the shoreline beyond urban runoff, such as loss of open space, vegetation removal, change in, and possible loss of aesthetic views, etc.	Agreed. Added bullet titled Land Use, Urbanization and Population Growth that generally describes the impacts of urbanization.
Page 4-10, Section 4.2.5, last two bullets.	These seem to belong in the water quality section 4.2.4, except for the physical structure components of the two items. Perhaps I misread these??	Section 4.2.4 is a discussion of actual water quality issues while 4.2.5 is a discussion of what causes and/or influences the water quality of the river. There is, of course, some overlap.
Page 4-22, Section 4.5.3, 2 nd bullet, 1 st sentence.	Flows are variable due to operation of upstream dams and “natural” river flows would vary from approximately 200 cfs to over 45,000 cfs.	Bullet changed to: Flows are variable due to <i>natural seasonal influences</i> and operation of upstream dams.
Page 4-30, Section 4.7, only paragraph in section, 2 nd sentence.	Havermele should be spelled Havermale	Corrected.
Page 4-31, Section 4.7.1, 1 st paragraph on page, last sentence.	New development in this reach will likely be redevelopment of existing properties. This is not the case, as evidenced by the Upper Falls Condos, which are currently being developed. They are replacing open space in the same manner as the other proposed condo situated between the credit union and the flour mill will do. Also, the other new developments that will take place in the area are not likely to be constructed on foot prints of existing buildings. This document should reflect how these new developments will affect the shoreline.	Revised paragraph to read: Built Structures/Impervious Surfaces/Development Intensity This reach is the most highly developed within the study area. Approximately 8 percent of the total area of the reach is building footprint and impervious surface coverage is 24 percent. These are the largest percentages for non-vegetative cover within the study area. It is anticipated that new development will occur within this reach as redevelopment of existing properties and also as infill of currently open private land as evidenced by the condominium developments under construction and as proposed
Page 4-31, Section 4.7.1, last paragraph on page.	Add Huntington Park as an access site along the south shore below Monroe Street Dam.	Huntington Park is located in the next reach and it is discussed in that section.
Page 4-33, Section 4.7.1,	The description for Frequently Flooded (3) is missing text at the end	Text is not missing, but a “the” was removed that

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Critical Area Table.	of Gonzaga.	clarified the sentence.
Page 4-33, Section 4.7.2, last paragraph on page, 4 th sentence.	“The hydrologic regime is controlled mostly by upriver dams.” Should be changed to read “The hydrologic regime is controlled by natural hydrology, surface and groundwater use, and upriver dams.”	Comment incorporated.
Page 4-41, Section 4.8.3, last bullet.	Replace “Lower Falls Dam” with Monroe Street Dam”.	Revised.
<p>General comments pertaining to maps.</p> <p>The Shoreline document would be better if specific maps pertaining to each river reach were included. The maps need to include the pertinent materials that are important and discussed within the document. For instance, if there is a certain section of riparian habitat corridor that should not be developed or disturbed, it needs to be listed in the document and on a map. This way the reader is provided both spatial and geographical locations of sensitive areas. Otherwise, identifying areas, such as potential corridors to river riparian zones, sensitive riparian areas, etc. would likely be viewed as arbitrary and capricious.</p> <p>This document assumes the reader knows where the City limits, Mission Street, Greene Street, Felts Field and the various dams are located. Without legal descriptions or maps which detail these areas it makes the document cumbersome to understand in regard to which areas can or can not be developed.</p> <p>It appears that some of the areas designated as high quality function are also zoned for residential development. This is confusing, as are the areas designated as critical areas, potential wildlife corridors, and riparian habitat functions. To better explain the main points of these general comments, we have listed two examples where there is limited information.</p> <p>Spokane River: Reach SR-1</p> <p>The document discusses riparian vegetation, 13 acres of frequently flooded areas, and CMZ, however there is no map that delineates these. The reader would need to open a separate map and find this information. A map that shows the area of SR-1 and legal descriptions would be a helpful tool for the reader to assess the 13 acres that are frequently flooded, the CMZ, and those areas that have good riparian vegetation? The current GIS city maps are not helpful when trying to determine any of these areas because the scale is so small.</p> <p>Page 4-15: The document provides little information about the location of a potential wildlife corridor connecting Beacon Hill to the river riparian zone. Please provide a map that shows where the potential</p>		<p>There is an accompanying map portfolio that is separate from the document. The map portfolio provides much of the information described in this comment.</p> <p>The maps are intended to be used as general planning tools for the Shoreline Program. They are not intended for engineering or route location design. The City has additional GIS data layers that were prepared by URS that provide more information than shown on the published maps. We suggest contacting the City about acquiring this information.</p> <p>The inventory included utilities provided by the City and Avista. The document presents a description of the major utility corridors and river crossings that were provided to us. In addition, the document provides a recommendation that maintenance of existing utilities within the shorelines needs to be considered as the SMP is developed.</p> <p>We would be happy to meet with your to discuss your specific comments.</p>

corridor is and to which river riparian zone it would connect, to make sure there are no inconsistencies with existing land uses and zoning (like Upriver Drive).

Page 4-16: Include a map and show the location of the Boulder Beach area, Upriver Dam, Felts Field, and where the City of Spokane, City of Spokane Valley and Spokane County have jurisdiction within this reach.

Spokane River: Reach SR-2

This section says this area consists of 262 acres.

Page 4-20: Discusses notable plant communities between RM 78-79. Where is this and how does the reader know the location of these plant communities?

Page 4-21: Nine-three percent of this area is designated as urban Natural Open Space by WDFW. Please identify this area, as well as the above referenced corridor on a map. The document discusses RHA's that extend to the outer edge of the 100 year flood plain, the CMZ or 250 feet past the OHWM, etc. The frequently flooded areas states that there are 53 acres and lists some areas but doesn't include them on a map. Please identify these areas on a map.

There seems to be a general assumption that the reader knows where specific areas are located in respect to river miles, river reaches, features, etc. The existing maps are of little help when identifying the significant features and areas.

Avista has many existing utility corridors in and along the shoreline area. If shoreline development increases, more utilities will be required which, like existing utilities, will require scheduled and unscheduled maintenance, including periodic vegetation management. Detailed maps will greatly assist us in planning current and future utility maintenance and developmental needs.

Spokane County Conservation District (received December 2006)

Document Location	Comment	Response
	The list of acronyms should be in alphabetical order. I think this would be easier to locate than just when it occurs in the document.	Comment incorporated.
Page 1-3	Last paragraph indicates Latah Rd at RM 8.1. This should be Hatch Rd.	Corrected.
	The Land Use Historical Summary developed by the consultant does not cite any references. This is unacceptable. Reference documents had to be utilized to write these summaries.	This is a summary of the shoreline history as stated. Much of the information is available in the Spokane Libraries Northwest Room. Specific references are not supplied.
Page 2-4	How can it be stated that the impacts upriver and downriver have been relatively low? The dam had significant effects to the river. It effects flow and the amount of riparian vegetation. I believe that would constitute an impact. It may also be perceived that the shorelines were impacted by early agricultural fields and then development. The Centennial trail is an impact as well.	We agree that Upriver Dam had major impacts to the River. This section was revised to say development was less intense except for Upriver Dam. Reference to the Centennial Trail was added.
Page 2-4	When was original Sandifur bridge built	No specific reference noted, but in the 1910's.
Page 2-4	Third paragraph refers to Latah Creek (Vinegar Flats) in a section designated to the Spokane River. This should be removed and placed in the next section.	Agreed, statement moved.
Page 2-5	Last paragraph indicates that the 74 Expo left behind the Imax theatre, Opera house, Convention Center, Hotel. Is this correct for all of these? We weren't sure	Our understanding is that this is correct.
Page 2-6	First paragraph indicates the "Gonzaga river bend". This may be better indicated with a river mile marker.	Added Hamilton Street and Trent Avenue intersection as a descriptor.
Page 2-8	First paragraph under section 2.3.2. Latah Creek enters the city at Hatch Rd. Bridge, not Hatch Bridge.	Corrected.
Page 3-1	Fourth paragraph. It is Spokane County Conservation District, not Service.	Corrected.
	Please be consistent when referring to the SCCD. Sometimes we are referenced to as the "County" in the document. We are not part of the County government. We are a subdivision of the state. I believe it would be best to use our acronym to avoid confusion.	Corrected.
Page 3-5	We are not sure how the hyporheic Zone was assessed. It appears to be	These are qualitative statements based on soil type,

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	qualitatively.	geology and from general field observations.
Page 4-4	The Spokane County Proper Functioning Condition (PFC) should reference us as SCCD. This occurs again later on the page (last sentence. We are not the “County”.	Corrected.
Page 4-5	Replace County with SCCD in second paragraph.	Corrected.
Page 4-6	Section 4.2.2. Replace County with SCCD (first paragraph).	Corrected.
Page 4-6	I am not sure of the reference used for the NRCS. On the next page the plants refer to w willow black locust. I believe this is a misprint.	Corrected.
Page 4-9	Section 4.2.5. Now the dams are listed as major impacts to shorelines. Before they were not.	Refer to previous comment regarding dam impact discussion.
	There is no description on how the reaches for the Spokane River and Latah Creek were delineated. What was the basis? Some of the reaches match the SCCD inventory. Apparently URS work used some of our delineations for some reaches, but not for others. This may change the ability to compare SCCD inventory data with URS data.	Reach break justifications are provided in the data summary tables in the Appendices. Reaches were determined using field data, the SCCD reaches and City Land Use data. The inventory reaches were determined after discussions with the City and attempted to provide both an ecological and land use justification that the City could use in their planning process.
	We like the URS approach for detailed inventory (built environment, etc.). This is very good information.	Thank you. The approach generally follows the SMP Guidelines.
Page 4-22	Hyporheic is incorrectly spelled.	Corrected.
Page 4-22	Section 4.5.3. This reach is not the same one identified by the SCCD in 2005. The percentages used in this section are not specified in our document. This is liberal extrapolation of data that is not likely comparable due to reach differences. This tends to occur in other reaches as well. Caution should be used.	Additional verbiage has been added to the beginning of the inventory section that provides additional discussion on the SCCD work and how it was used in this inventory. Also revised wording in the individual sections to clarify the differences in the reaches used. Discussed at meeting on 12/28/07.
Page 4-32	Under Vegetation, the correct spelling is currant, not current.	Corrected.
	It may be appropriate to utilize the scientific names of the plants to avoid any confusion to botanists. Either put them in italics or parentheses).	Scientific names are included in the appendices.
Page 4-41	It is noted that Reach SR-5 has conflicting ratings between URS and the SCCD. It must be noted that the definitions used for ecological functioning are defined differently. They can be compared side by side. The SCCD’s study was a rapid assessment protocol for almost two	The SCCD Ecological rating is essentially a measure of riparian vegetation. Ecological function as used in the report follows the SMP guidelines, vegetation being one pathway that is required to be discussed. The

SHAPING SPOKANE VOLUME III, APPENDIX D

	hundred river miles. URS had a different intent and project scale.	inventory identified riparian vegetation as functioning adequately in this reach which is consistent with the SCCD findings. Note that the City inventory relied heavily on the SCCD ratings.
	The reach delineation for SR-7 is inadequate. River miles should be used to avoid questions.	River miles added. This reach was split up by Riverside State Park during the inventory work but has since been annexed to the City (July 2006).
Page 5-4	The first paragraph ends with an improper reference. Is this referencing the planning unit or a particular document?	Corrected.
Page 5-5	Section 5.2.2 should read SCCD PFC study as used before. At least there should be one consistent manner for this.	Comment incorporated.
Page 5-8	The delineation of reach LC-1 should utilize river miles to avoid confusion.	Agreed, revised for all Latah Creek sections.
Page 5-12	Where did the percentages for the SCCD study come from? I can't find anywhere in the SCCD document that states 75% was fair and 43% was good for the reach identified by URS. Please note that the PFC inventory ratings are based on the entire reach identified by the SCCD. This cannot be manipulated by URS. Confusion and misinterpretation has obviously occurred. If URS would like to discuss and coordinate these ratings with our work, it is suggested they contact us for confirmation of information. Otherwise, the evaluation must be based on the same reaches (river miles).	Comment added at the beginning of each inventory (Spokane and Latah) section providing information on the meaning of the rating system and describing the differences in reaches. Also revised wording in the individual sections to clarify the differences in the reaches used per our discussion on 12/28/06.
Page 5-13	Where did the information come from for the water quality for this reach? There is direct indication that there is a fertilizer and pesticide problem in the creek at this reach. Did URS conduct monitoring? We would like to see the documentation of these problems and sources. Furthermore, on page 5-9 for this reach, URS stated that there were no locations of concern and no water quality impairment. There is also indication that the sediment regime is burying potential spawning beds in this reach. WDFW has never indicated that there are potential spawning beds in this reach. In fact, most spawning areas would be much higher in watershed or in nearby tributaries. Where did this information come from?	Most of the water quality information utilized for the Latah Creek section of this report was contained in the WRIA 56 Watershed Management Plan. Sections have been added that address the comments. Reference to potential damage to spawning areas removed.
Page 5-17	Again, the SCCD PFC work is improperly referenced and interpreted for this reach. URS cannot equitably compare the inventory work. According to PFC methodology, the hydrological function of this reach is	Comment added at the beginning of each inventory (Spokane and Latah) section providing information on the meaning of the rating system and describing the

	considered proper. URS needs to read the definitions associated with this methodology. They would find that the reach, is indeed, properly functioning from a hydrological standpoint. Variability in flow does not constitute inadequate hydrological function.	differences in reaches. Also revised wording in the individual sections to clarify the differences in the reaches used per our discussion on 12/28/06.
Page 5-18	Again the comments about water quality and spawning beds. This is inappropriate without solid documentation of these issues. Observing the color of the water and making assumptions regarding sediment, pesticides, and fertilizers is highly inappropriate. The SCCD is very aware of the water quality issues in the creek. We have documentation that may be of use.	Most of the water quality information utilized for the Latah Creek section of this report was contained in the WRIA 56 Watershed Management Plan. Sections have been added that address the comments. Reference to potential damage to spawning areas removed.
Page LC-2: Section 5.5.3	Natural restoration of reed canarygrass is a pipedream in the short-term. Reed canarygrass is extremely persistent and has been in the system for decades. Natural recruitment of woody species just doesn't happen. Active restoration is needed. It may take a hundred years to see any change.	Comment noted.
Page 5-23: Section 5.6.2	The SCCD did not rate this reach as properly functioning. The SCCD reach 21-C, which may include the URS reach LC-3, was listed as functional at-risk with a downward trend.	Corrected.

Washington Department of Fish and Wildlife (received 12/13/06)

Document Location	Comment	Response
	<p>Note comments are paraphrased in this table. See copy of letter from WDFW that is included in this document.</p> <p>Data Gaps: “Gather and incorporate all pertinent information”. Specifically WDFW was not directly involved with providing information for the City Inventory.</p>	<p>The original draft included information from personal field observations, from the SCCD PFC report and from the WRIA reports as well as the Priority Habitat and Species data provided by WDFW. Contact with WDFW was made early in the inventory process but a meeting and a list of species prepared by WDFW was not provided till after the draft was published. The information provided by WDFW is included in the final inventory report. Note that this information contains only a list of birds and wildlife.</p>
	Comment on angling not mentioned in the inventory report as a recreational use.	We have recently been communicating with Jeff Holmes and have included the information on access needs and angling locations on the Spokane River procured at the Spokane River Anglers Forum (2/15/07) in the inventory.
	Comment on the proposed whitewater park at the Sandifur Bridge.	We understand that the whitewater park, proposed at the Sandifur Bridge will include provisions for upstream migration of fish and downstream passage for recreational floaters and boats. A potential use conflict between whitewater use and angling may occur during some time periods. We understand that continued discussion on the proposed whitewater park and mixed uses in the gorge area are occurring.
	Comment on CMZ	The CMZ is supposed to be identified in the inventory per the SMP guidelines. Currently we are not aware of any State regulation that prevents construction in the SMP but the City is discussing this issue.

Appendix G

Spokane River and Latah Creek Shoreline Photos



1 - SR



2 - SR



3 - SR



4 - SR



5 - SR



6 - SR



7 - SR



8 - SR



9 - SR



10 - SR



11 - SR



12 - SR



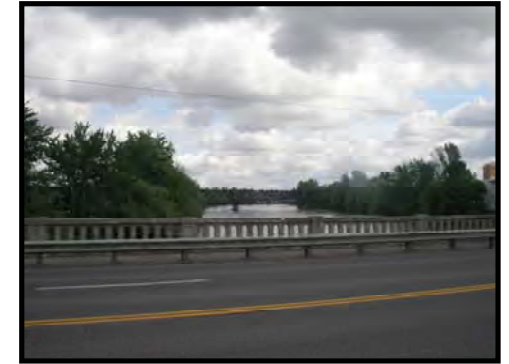
13 - SR



14 - SR



15 - SR



16 - SR



17 - SR



18 - SR



19 - SR



20 - SR



21 - SR



22 - SR



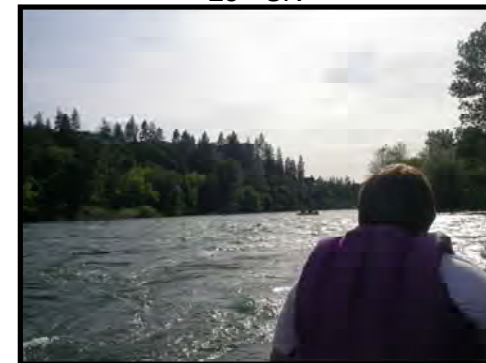
23 - SR



24 - SR



25 - SR



26 - SR



27 - SR



28 - SR



31 - SR



34 - SR



29 - SR



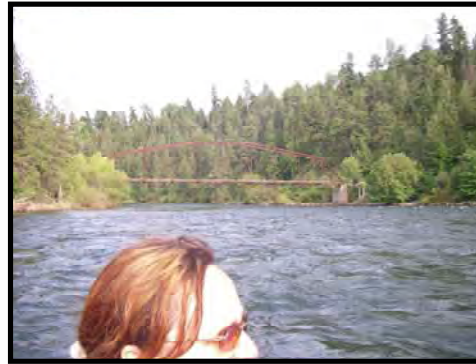
32 - SR



35 - SR



30 - SR



33 - SR



36 - SR



37 - SR



38 - SR



39 - SR



40 - SR



41 - SR



42 - SR



43 - SR



44 - SR



1 - LC



2 - LC



3 - LC



4 - LC



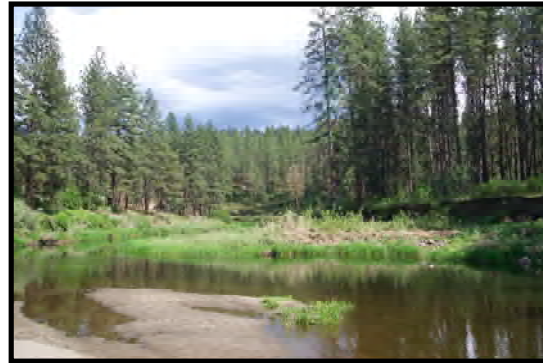
5 - LC



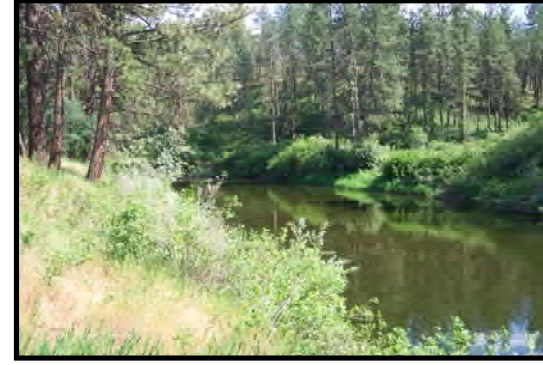
6 - LC



7 - LC



8 - LC



9 - LC



10 - LC



11 - LC



12 - LC



13 - LC



14 - LC



15 - LC



16 - LC



17 - LC



18 - LC



19 - LC



20 - LC



21 - LC



22 - LC



23 - LC



24 - LC



25 - LC



26 - LC



27 - LC



28 - LC



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29 - LC



32 - LC



35 - LC



30 - LC



33 - LC



36 - LC



37 - LC



38 - LC



39 - LC

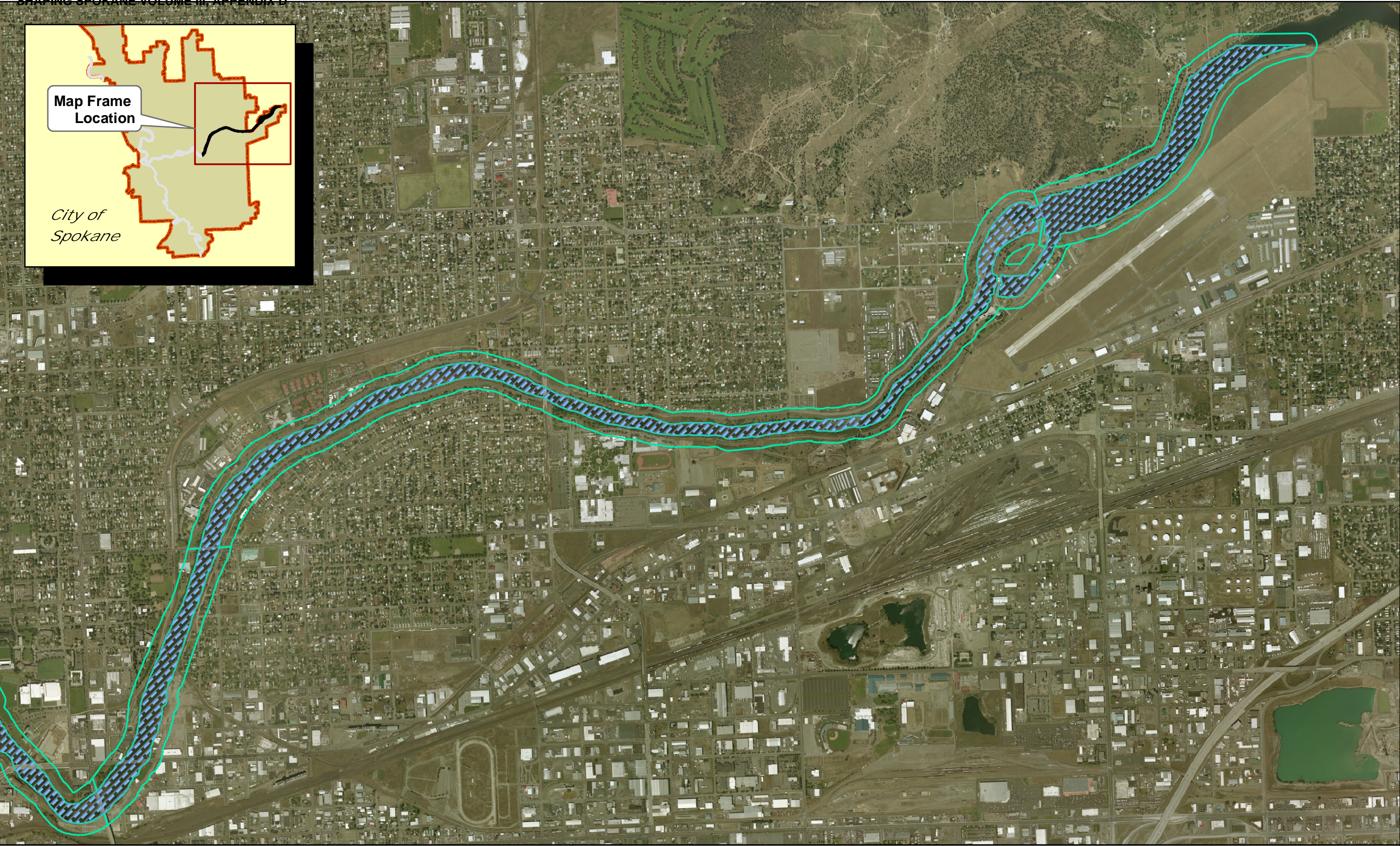
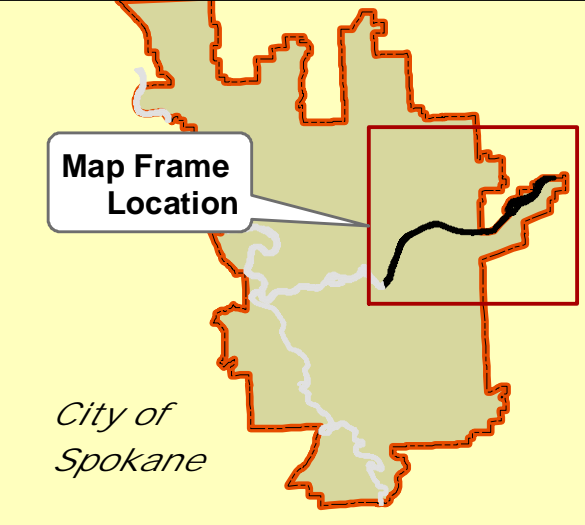



40 - LC




41 - LC

Appendix H
Spokane River and Latah Creek Map Portfolio
(separate document)

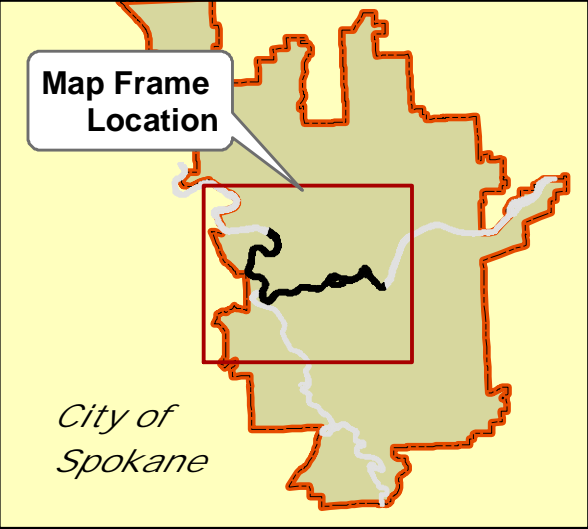
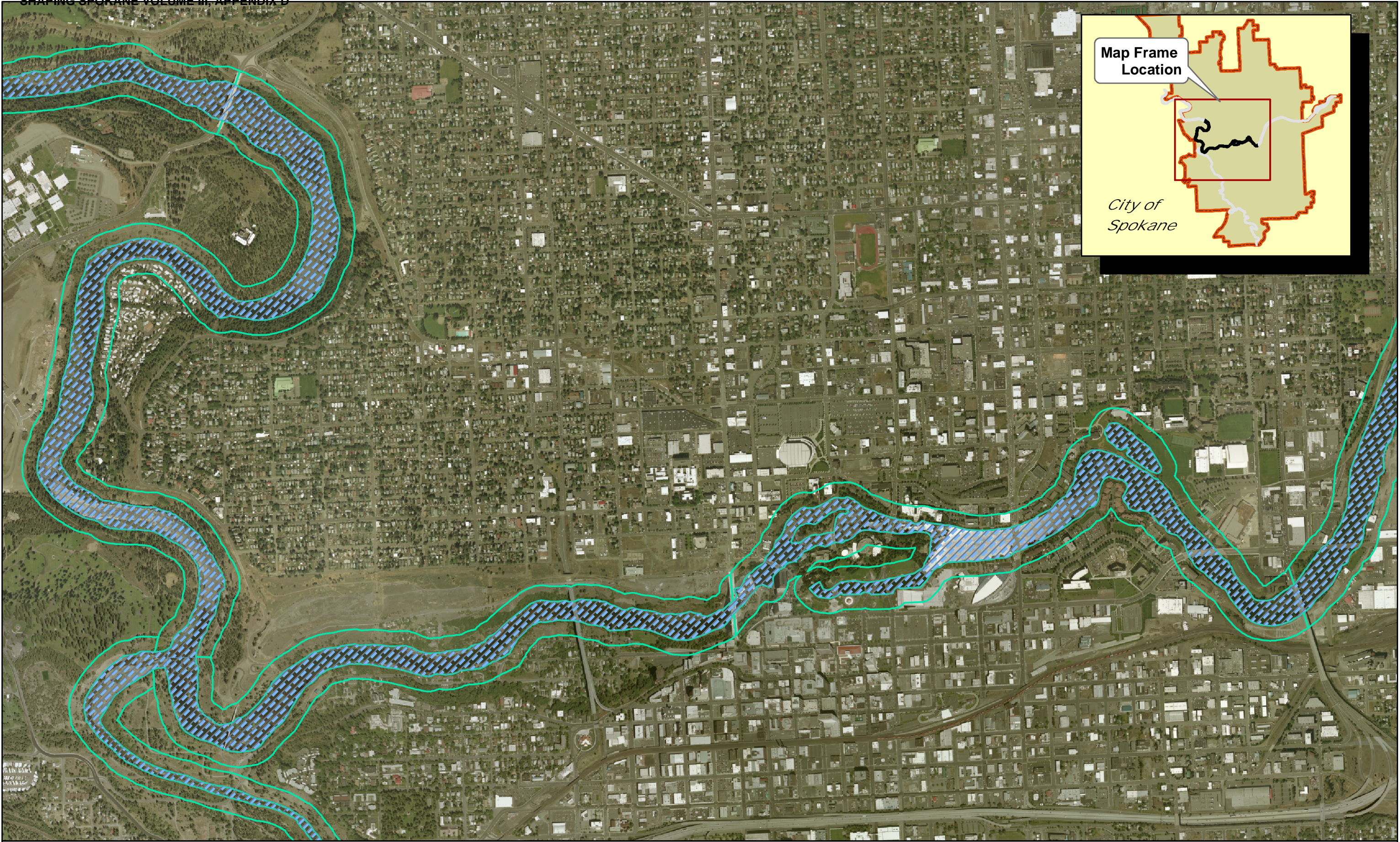




 Ordinary High Water Mark

 Shoreline Jurisdiction



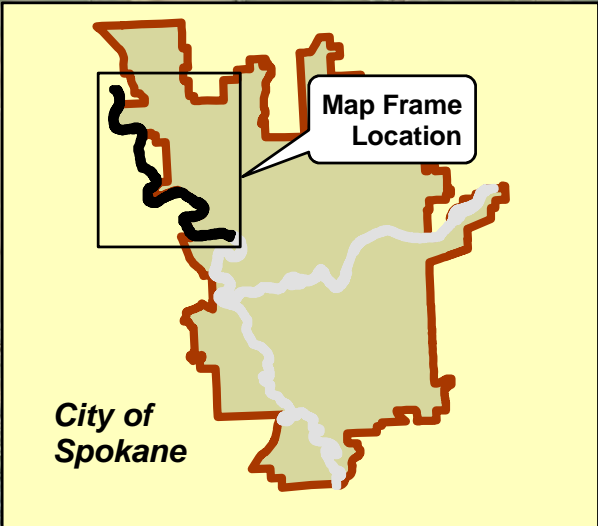
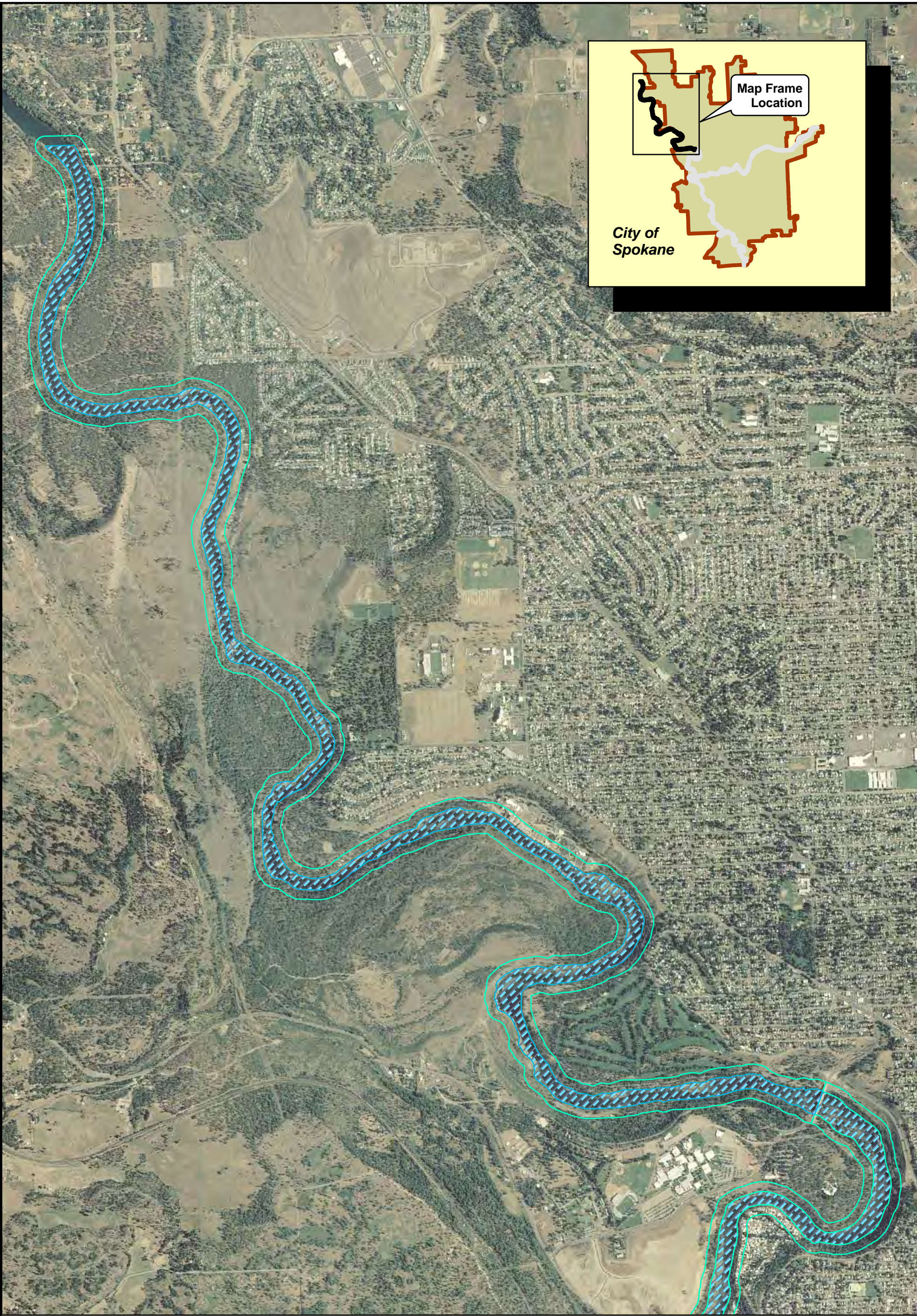
0 1,000 2,000 4,000 6,000 8,000 Feet





 Ordinary High Water Mark
 Shoreline Jurisdiction



0 750 1,500 3,000 4,500 6,000 Feet



 Ordinary High Water Mark
 Shoreline Jurisdiction

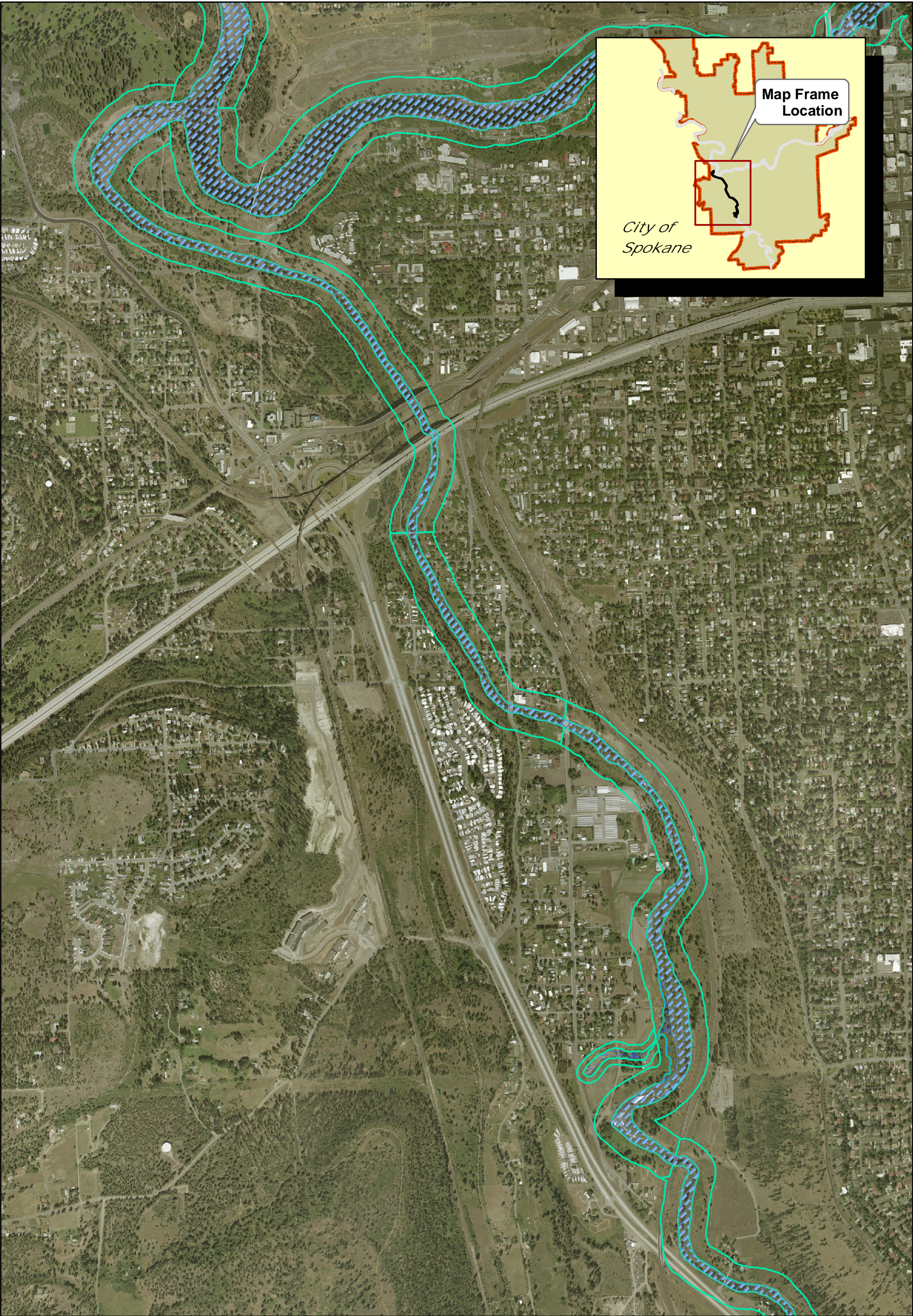





0 750 1,500 3,000 4,500 6,000 Feet

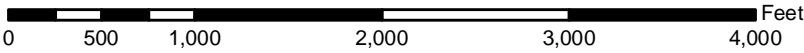
Shoreline Jurisdiction

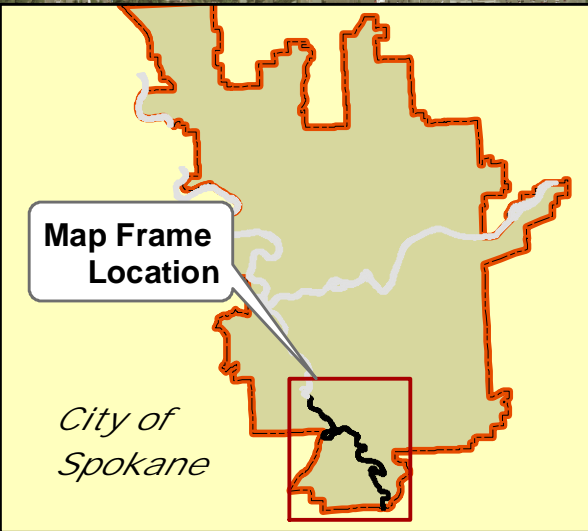
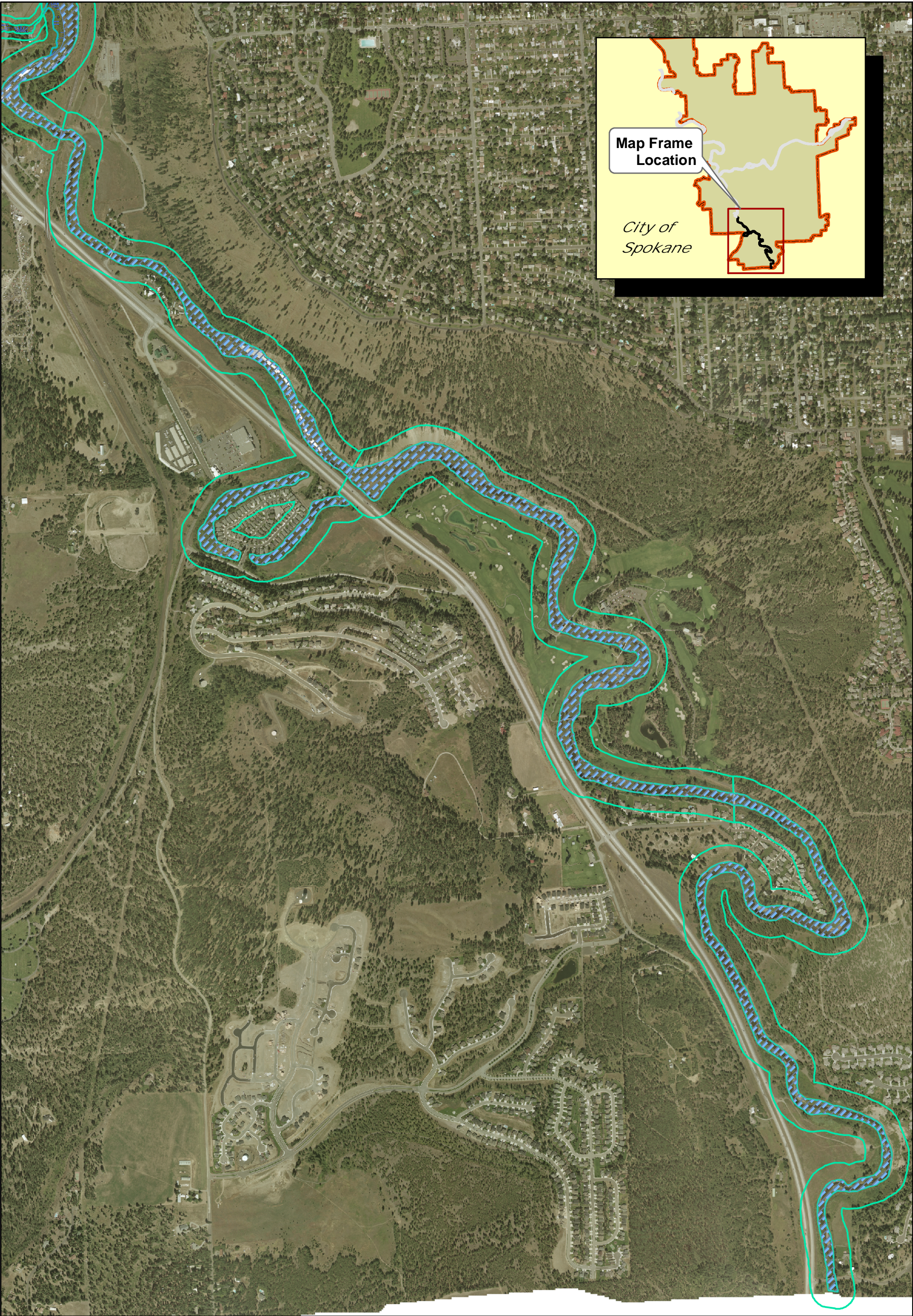
City of Spokane shoreline Master Program Update
Inventory and Analysis Map Portfolio






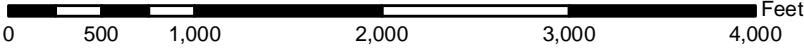


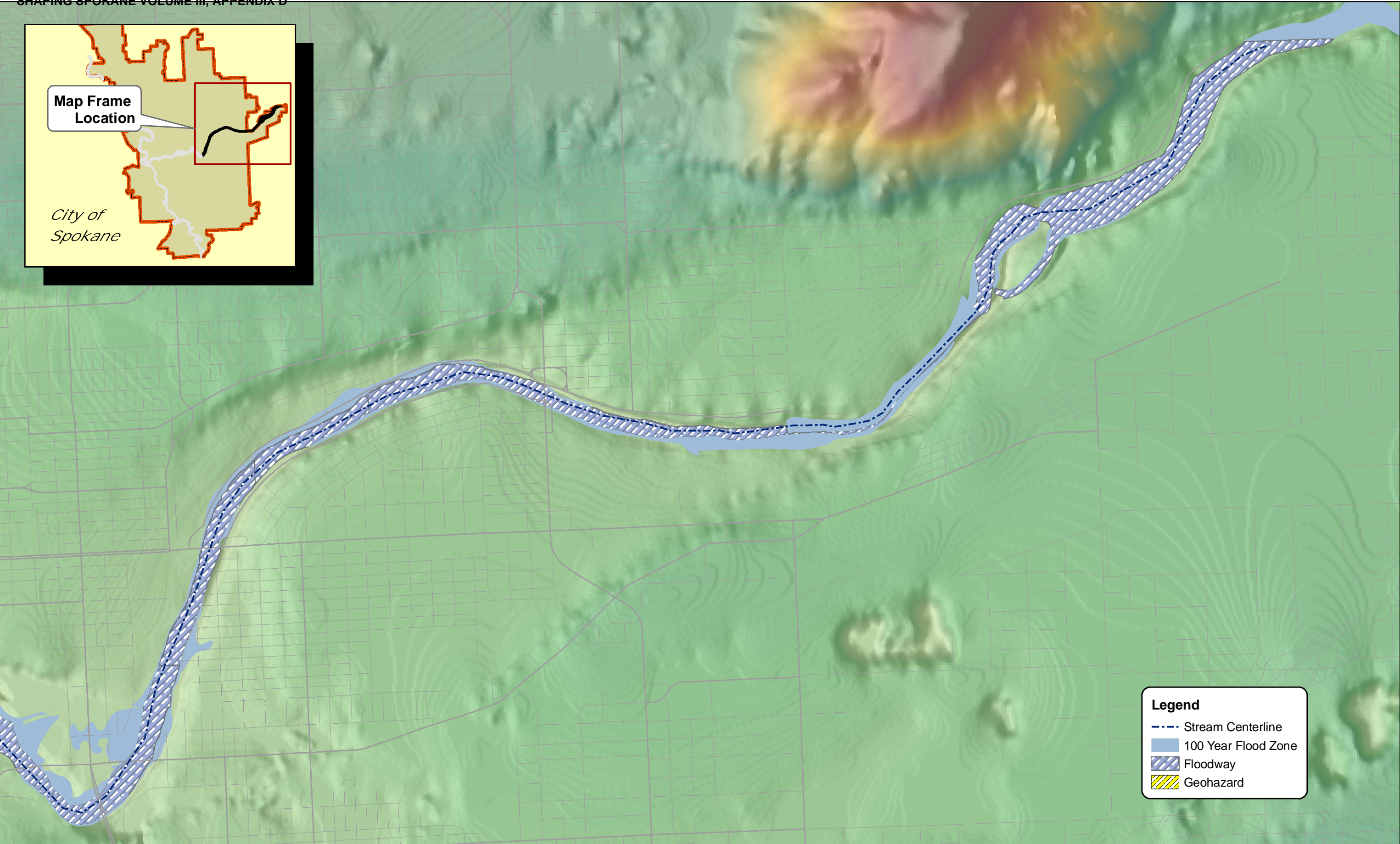
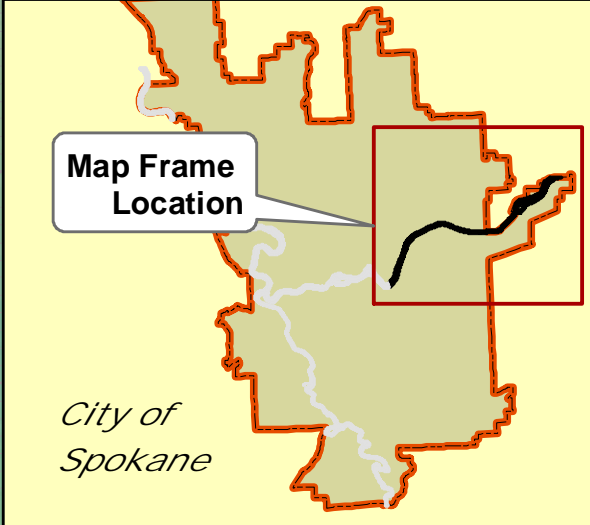
-  Ordinary High Water Mark
-  Shoreline Jurisdiction
-  Associated Wetland





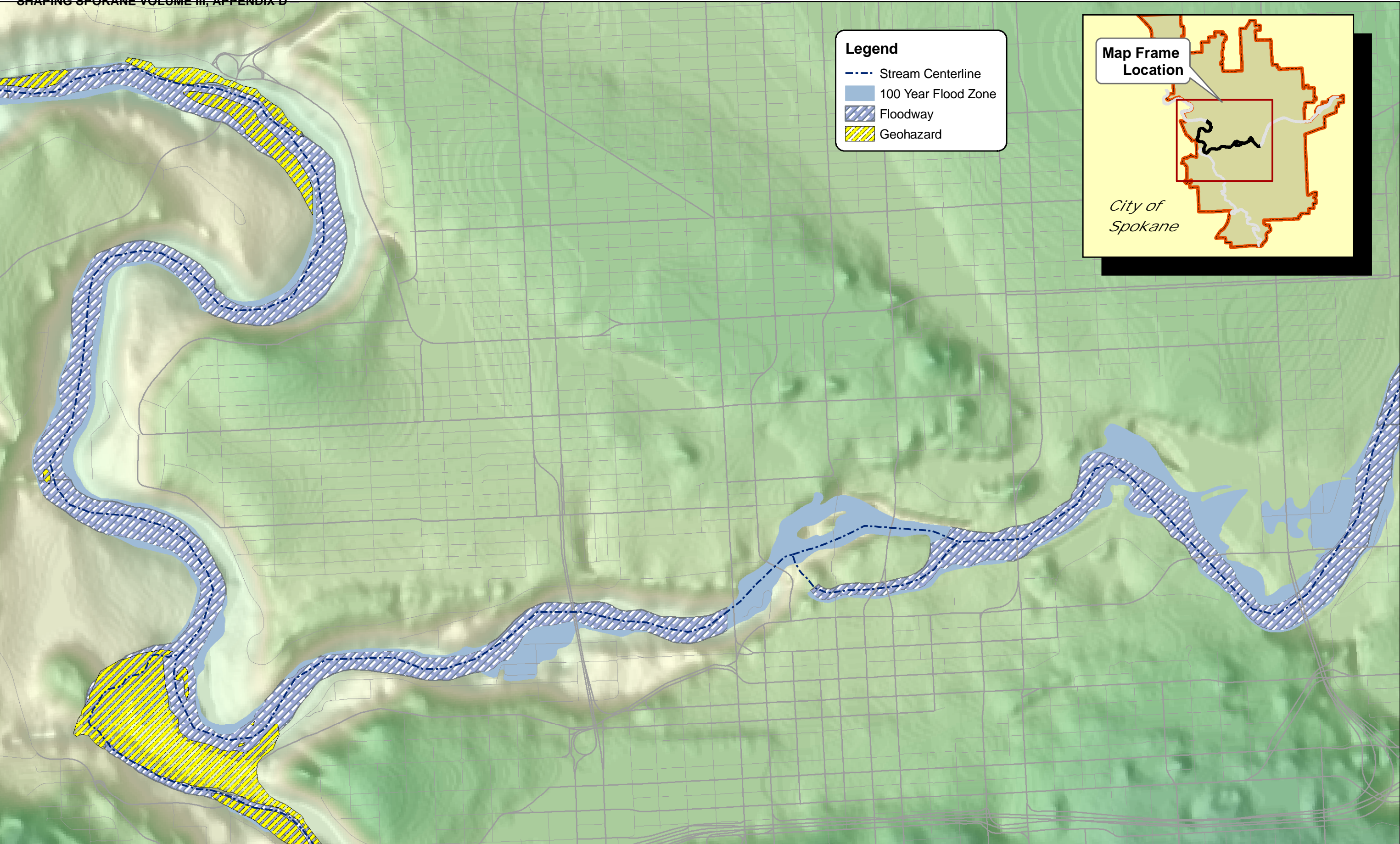
-  Ordinary High Water Mark
-  Shoreline Jurisdiction
-  Associated Wetland





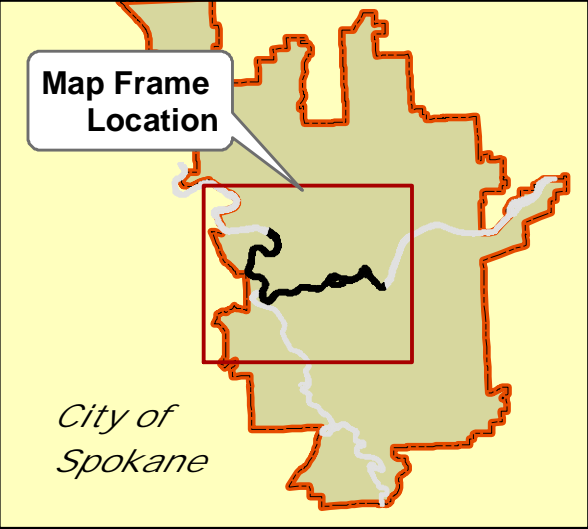
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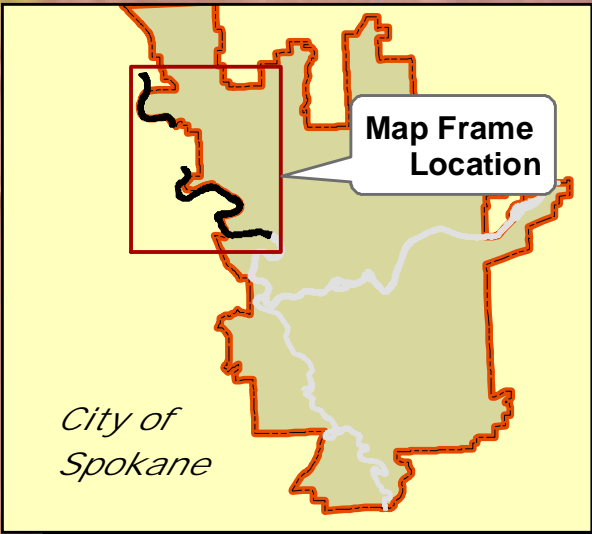
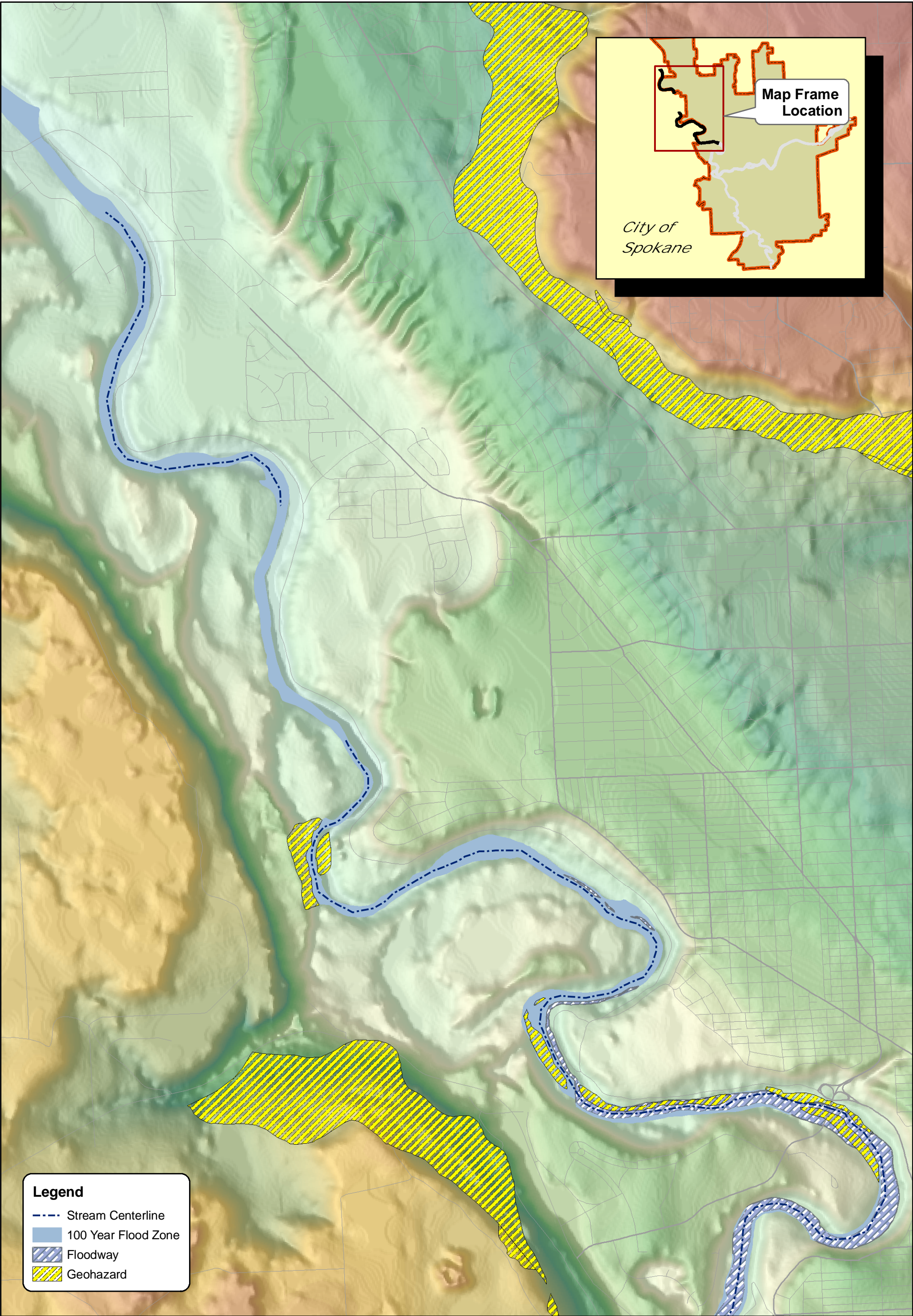
- Stream Centerline
- 100 Year Flood Zone
- Floodway
- Geohazard



Legend

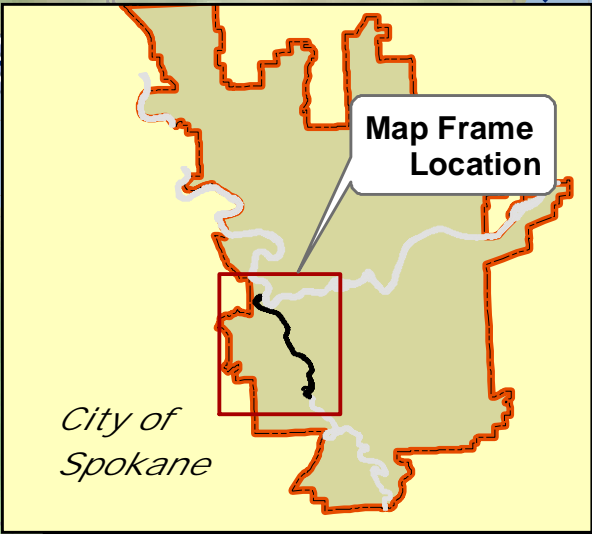
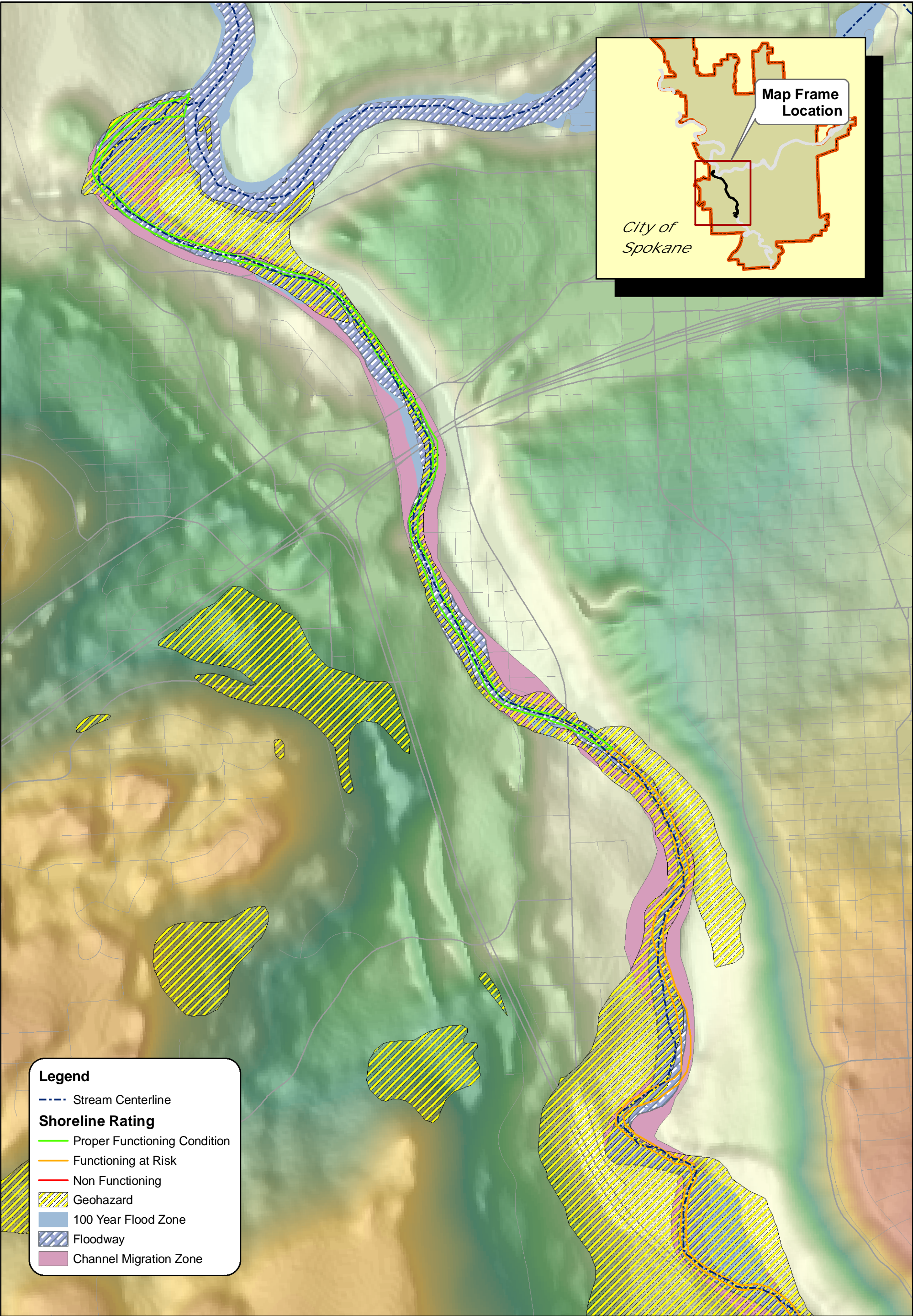
- Stream Centerline
- 100 Year Flood Zone
- Floodway
- Geohazard





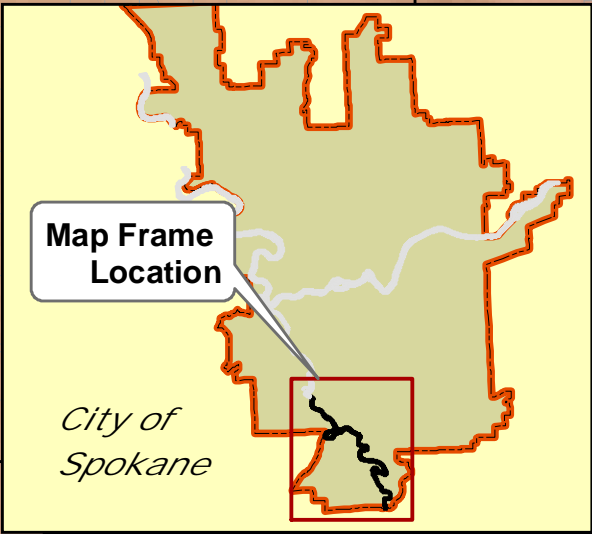
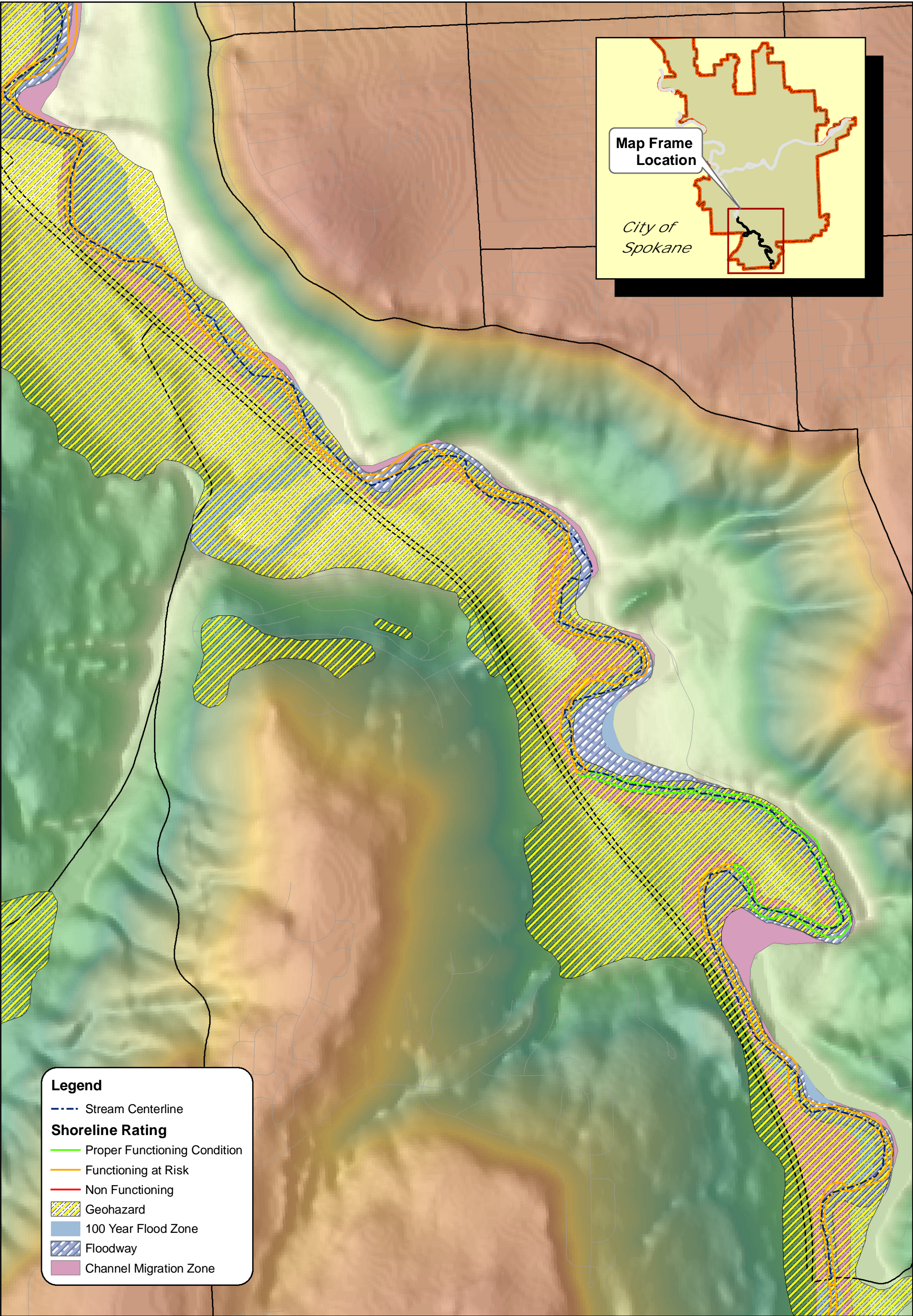
Legend

- Stream Centerline
- 100 Year Flood Zone
- Floodway
- Geohazard



Legend

- Stream Centerline
- Shoreline Rating**
 - Proper Functioning Condition
 - Functioning at Risk
 - Non Functioning
- Geohazard
- 100 Year Flood Zone
- Floodway
- Channel Migration Zone



Legend

--- Stream Centerline

Shoreline Rating

— Proper Functioning Condition

— Functioning at Risk

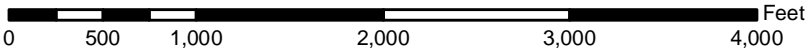
— Non Functioning

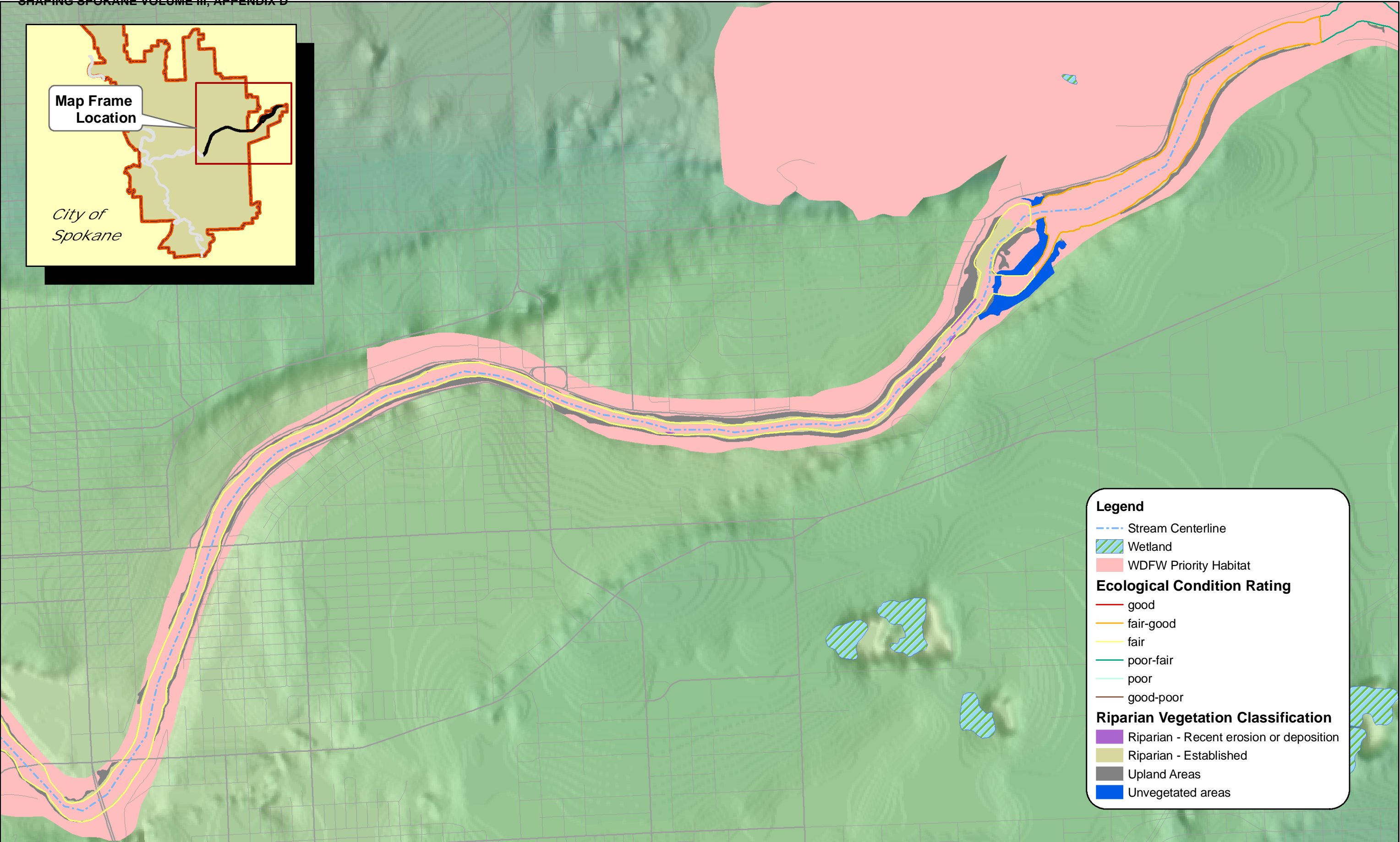
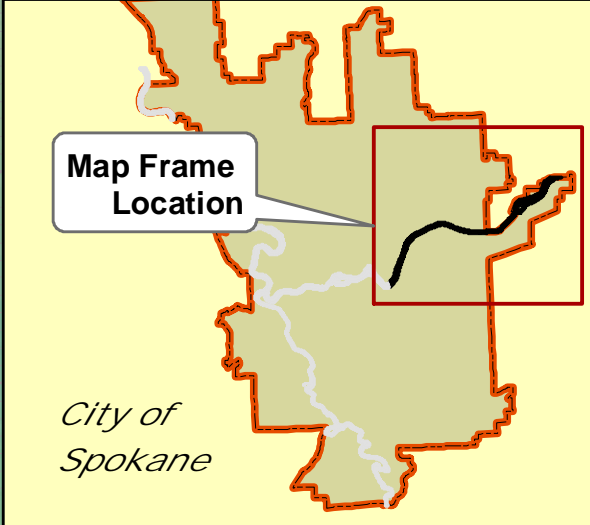
▨ Geohazard

100 Year Flood Zone

Floodway

Channel Migration Zone





Legend

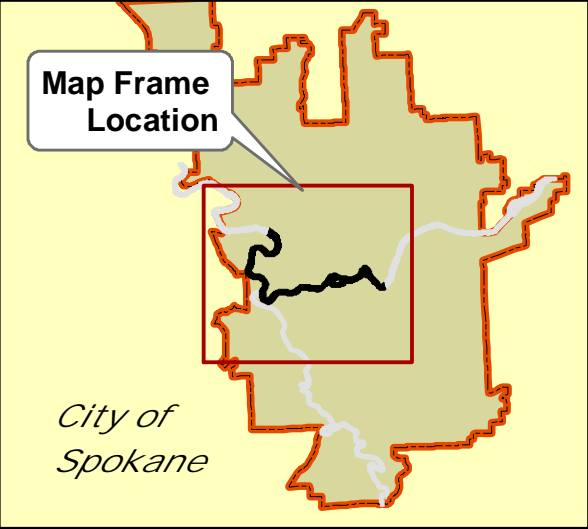
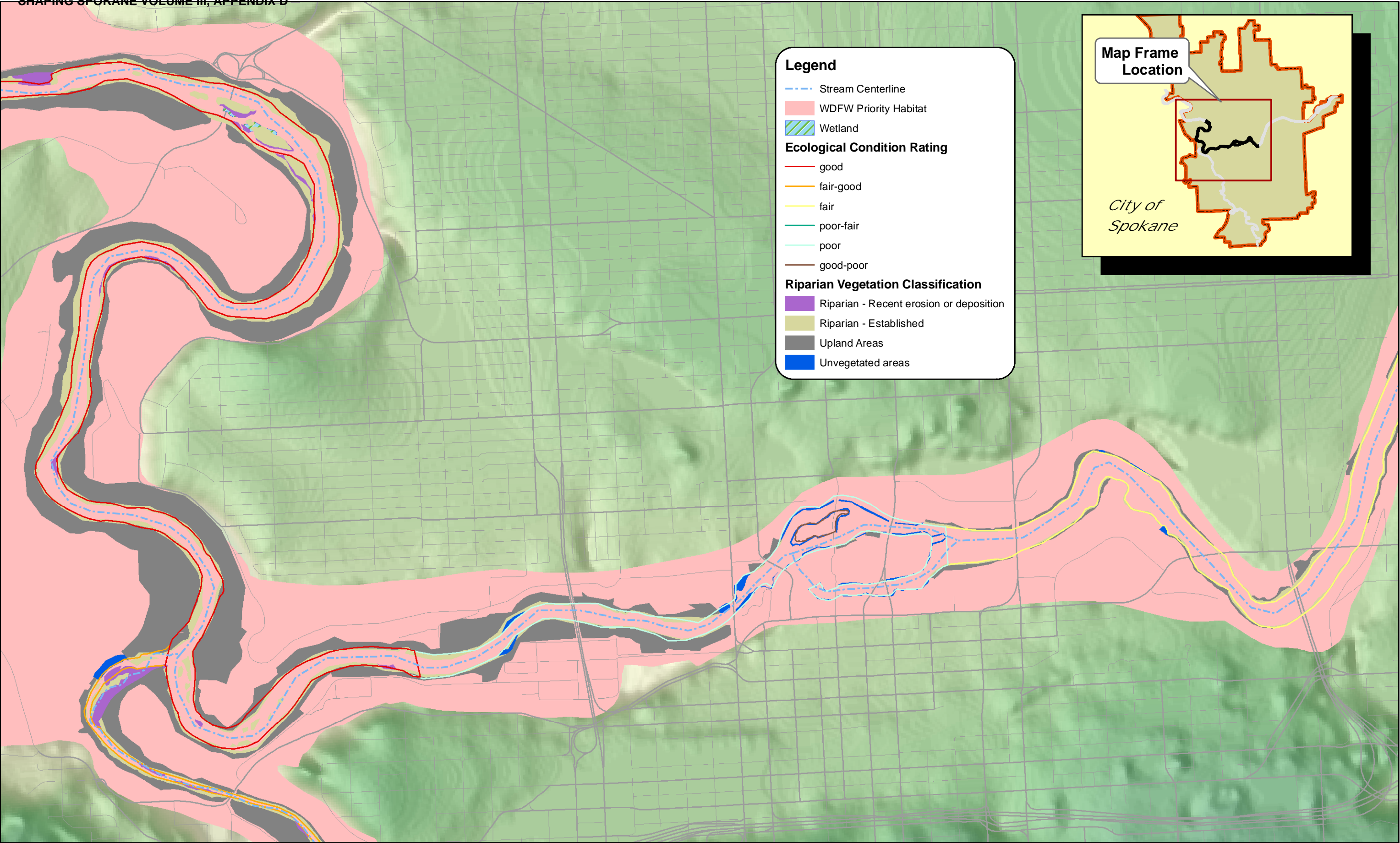
- Stream Centerline
- Wetland
- WDFW Priority Habitat

Ecological Condition Rating

- good
- fair-good
- fair
- poor-fair
- poor
- good-poor

Riparian Vegetation Classification

- Riparian - Recent erosion or deposition
- Riparian - Established
- Upland Areas
- Unvegetated areas



Legend

--- Stream Centerline

WDFW Priority Habitat

Wetland

Ecological Condition Rating

good

fair-good

fair

poor-fair

poor

good-poor

Riparian Vegetation Classification

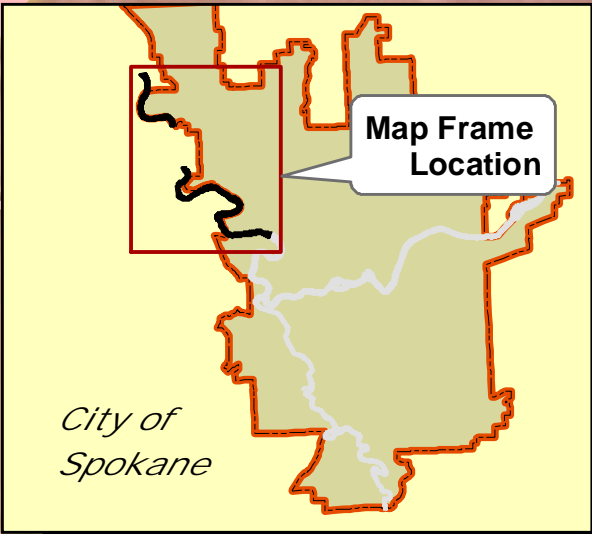
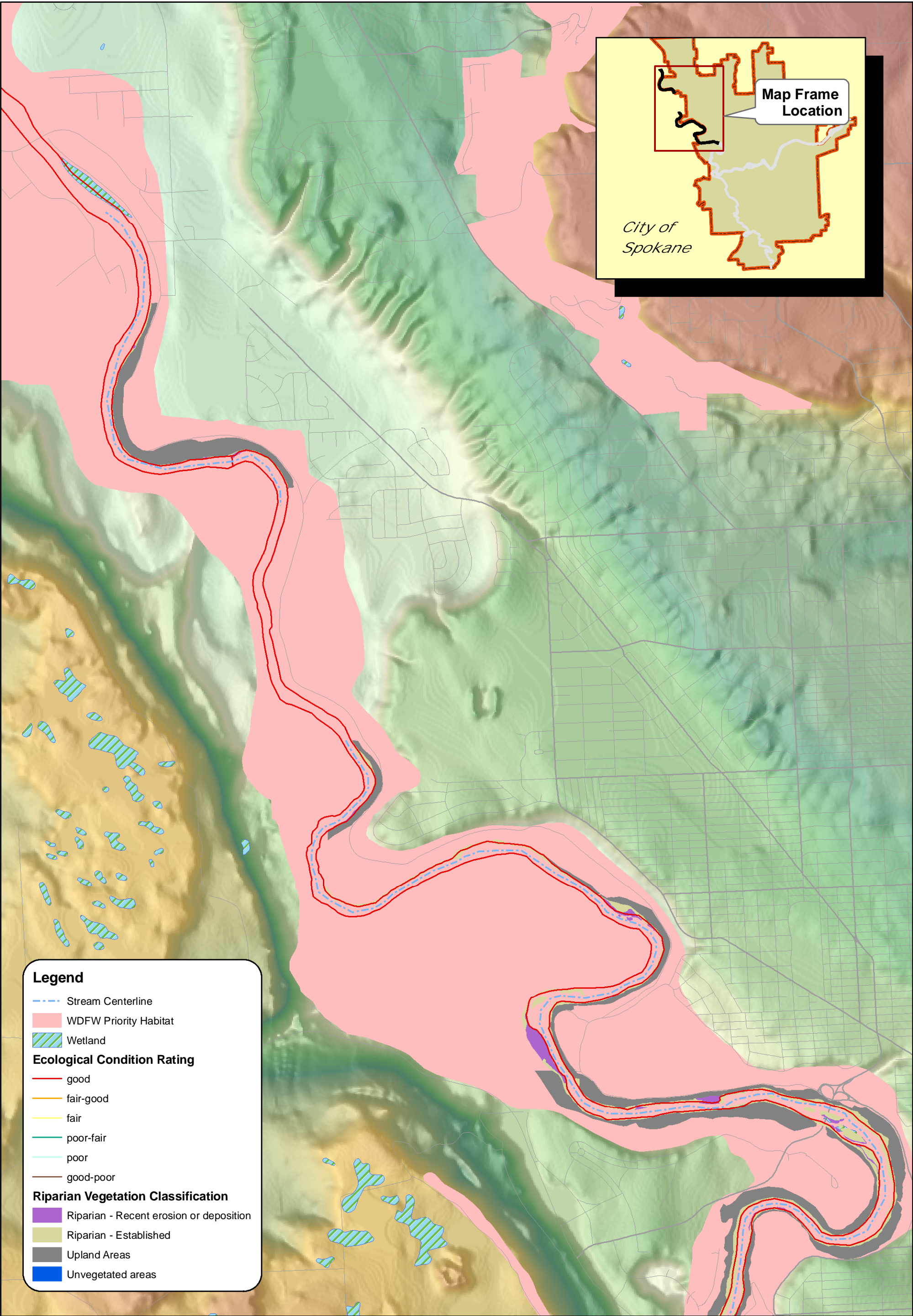
Riparian - Recent erosion or deposition

Riparian - Established

Upland Areas

Unvegetated areas





Legend

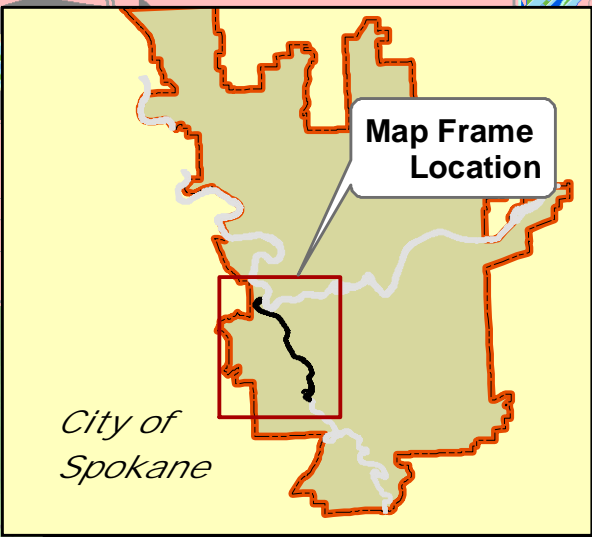
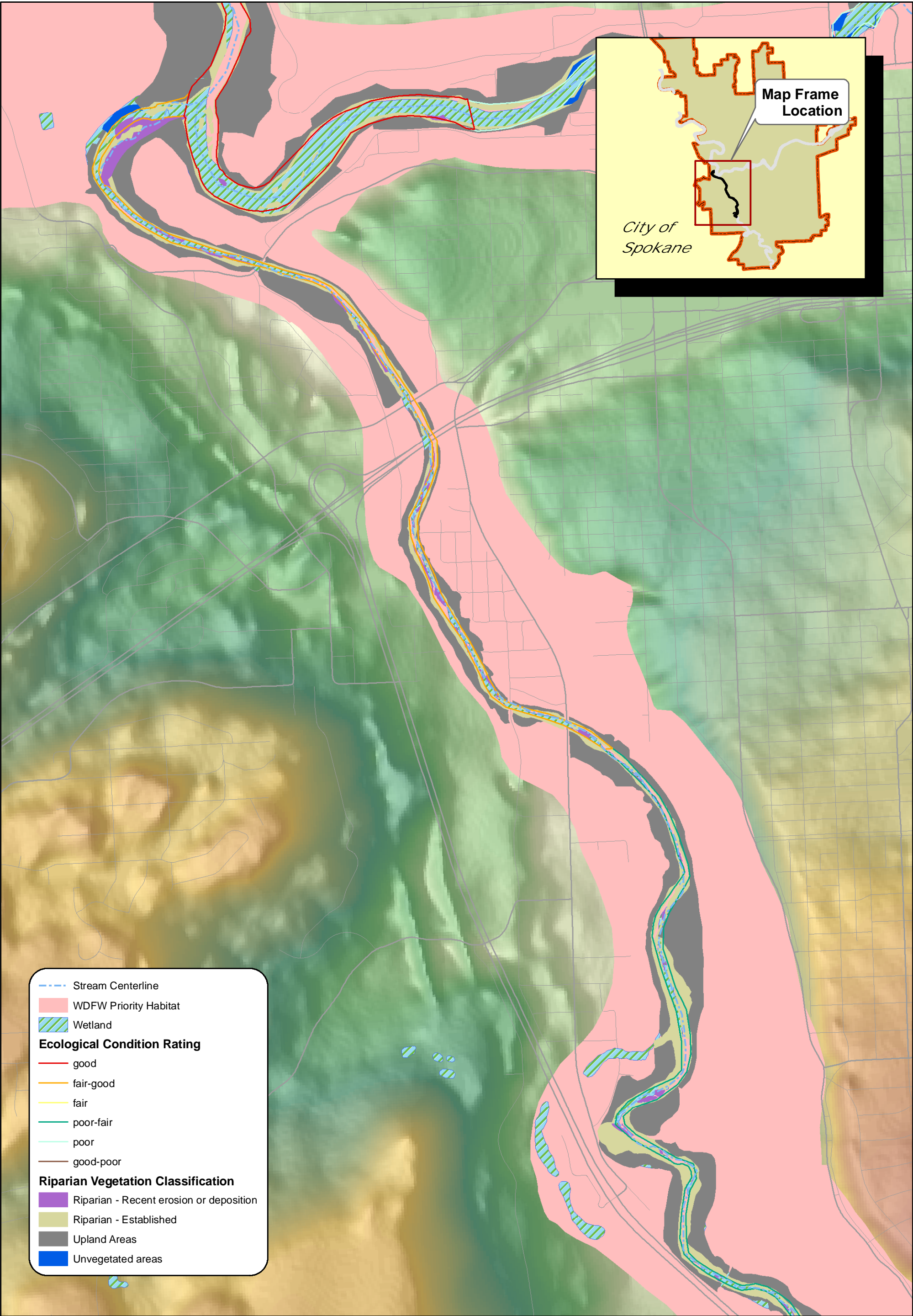
- Stream Centerline
- WDFW Priority Habitat
- Wetland

Ecological Condition Rating

- good
- fair-good
- fair
- poor-fair
- poor
- good-poor

Riparian Vegetation Classification

- Riparian - Recent erosion or deposition
- Riparian - Established
- Upland Areas
- Unvegetated areas



Stream Centerline

WDFW Priority Habitat

Wetland

Ecological Condition Rating

good

fair-good

fair

poor-fair

poor

good-poor

Riparian Vegetation Classification

Riparian - Recent erosion or deposition

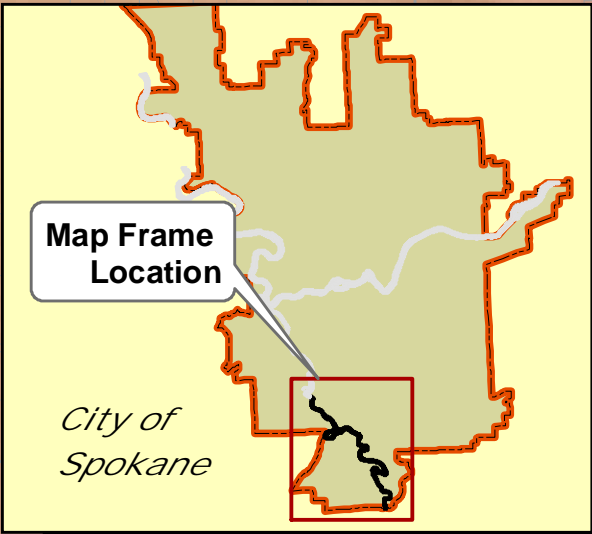
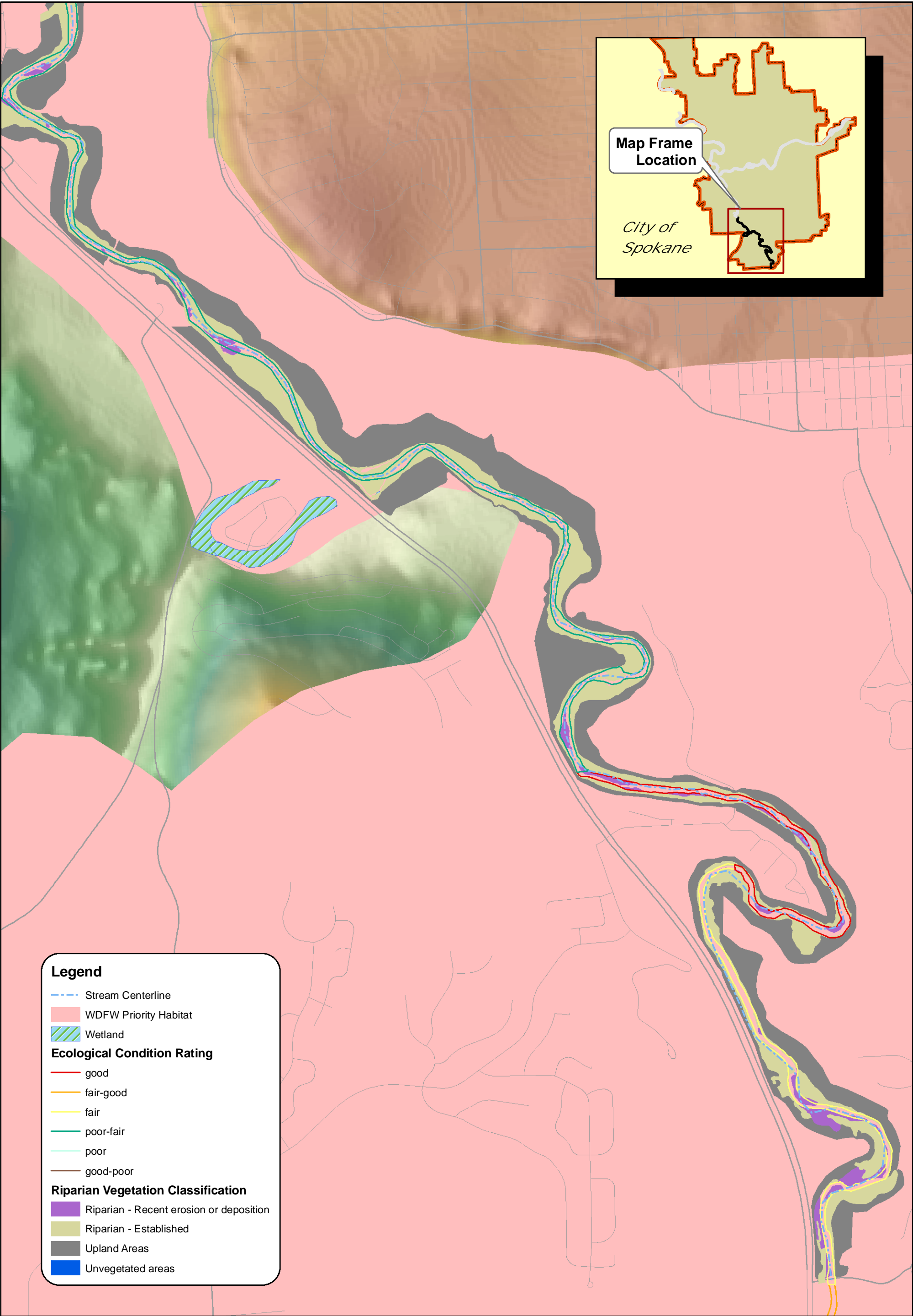
Riparian - Established

Upland Areas

Unvegetated areas

URS

Biological Characteristics
City of Spokane Shoreline Master Program Update
Inventory and Analysis Map Portfolio



Legend

- Stream Centerline
- WDFW Priority Habitat
- Wetland

Ecological Condition Rating

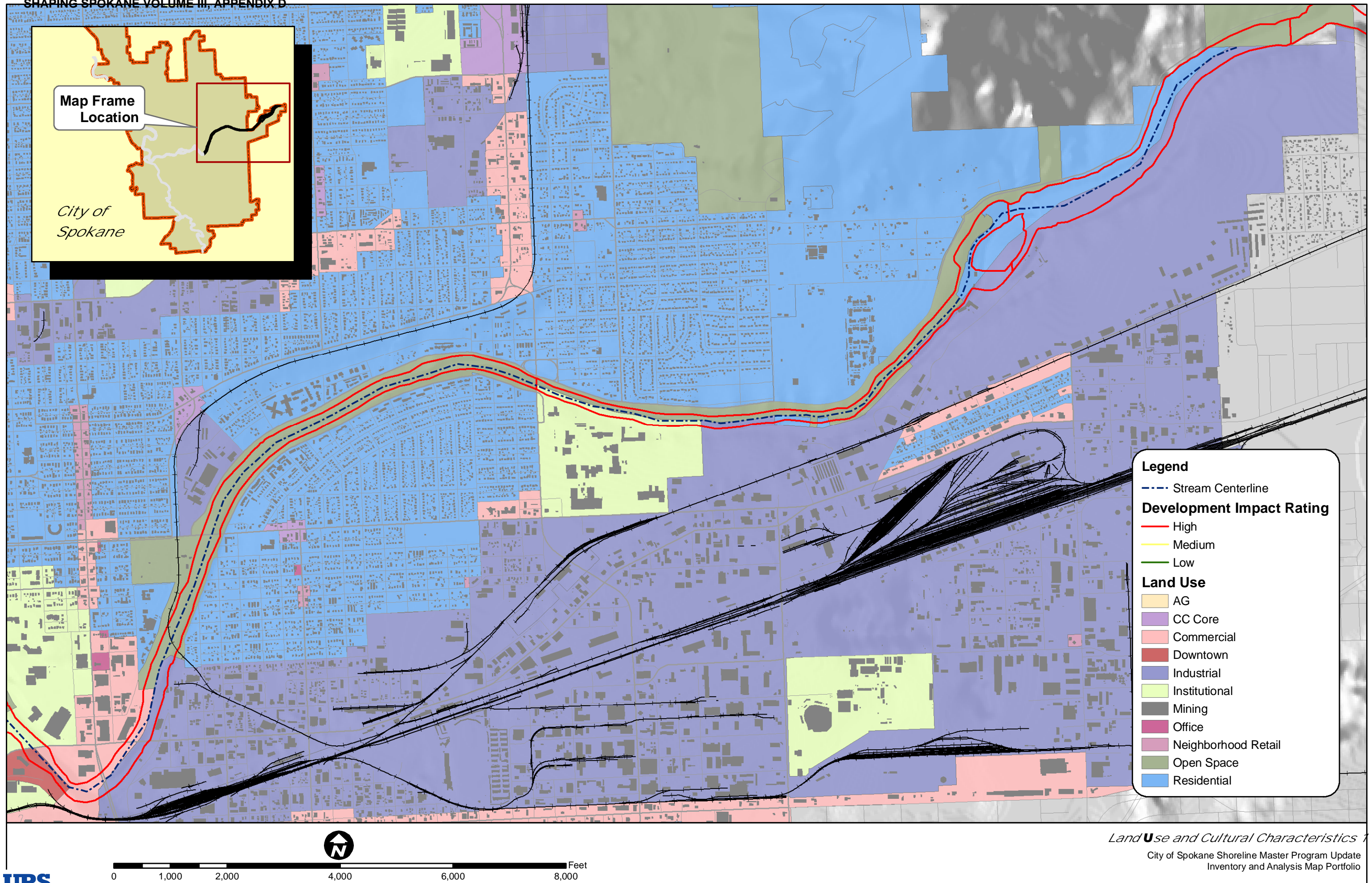
- good
- fair-good
- fair
- poor-fair
- poor
- good-poor

Riparian Vegetation Classification

- Riparian - Recent erosion or deposition
- Riparian - Established
- Upland Areas
- Unvegetated areas



0 500 1,000 2,000 3,000 4,000 Feet



Legend

--- Stream Centerline

Development Impact Rating

High

Medium

Low

Land Use

AG

CC Core

Commercial

Downtown

Industrial

Institutional

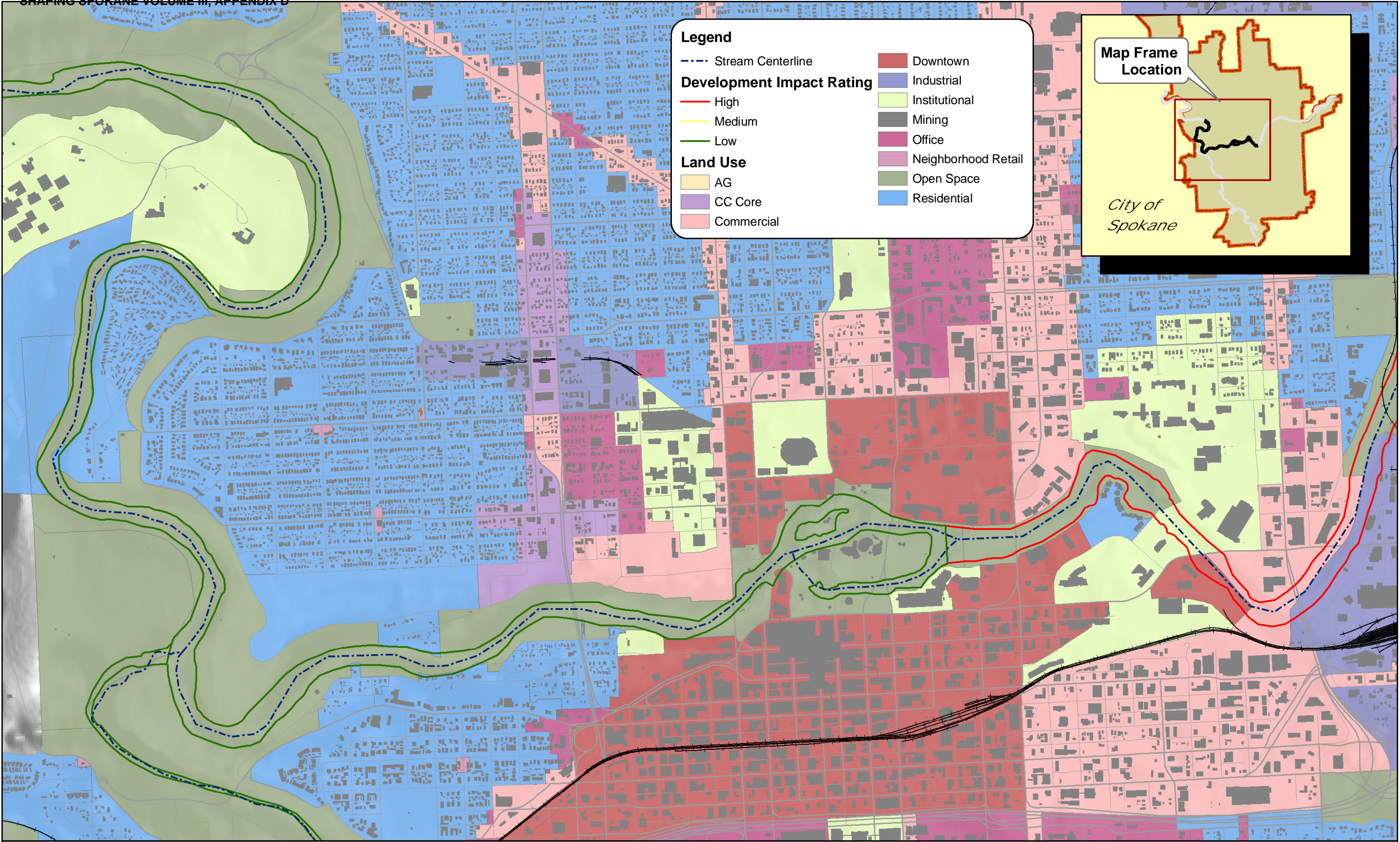
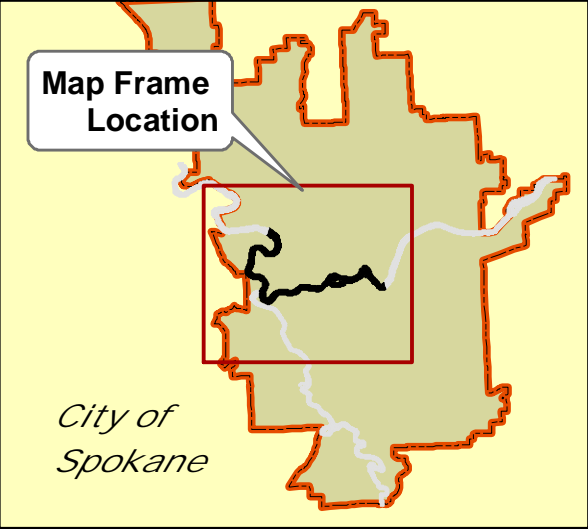
Mining

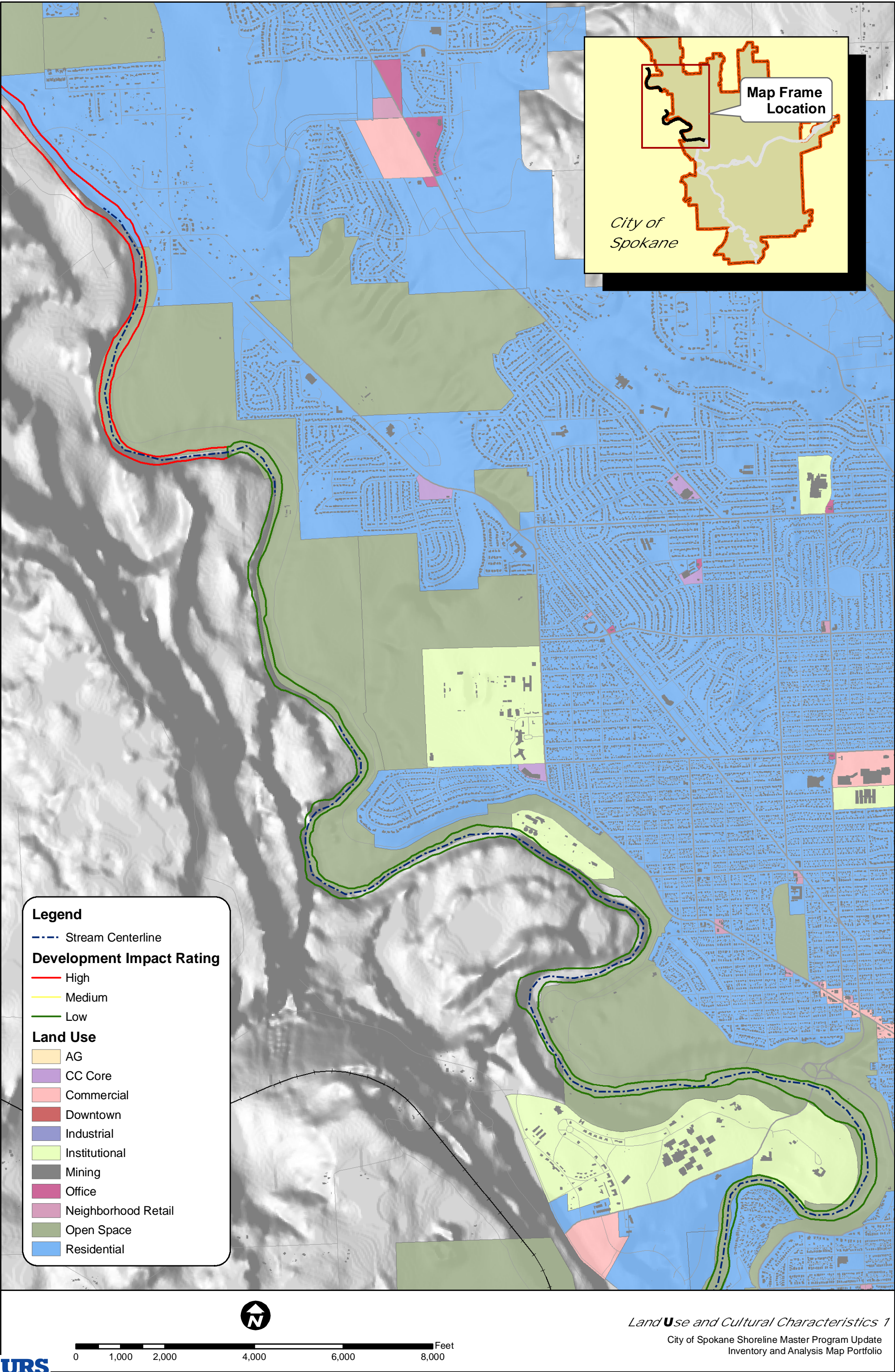
Office

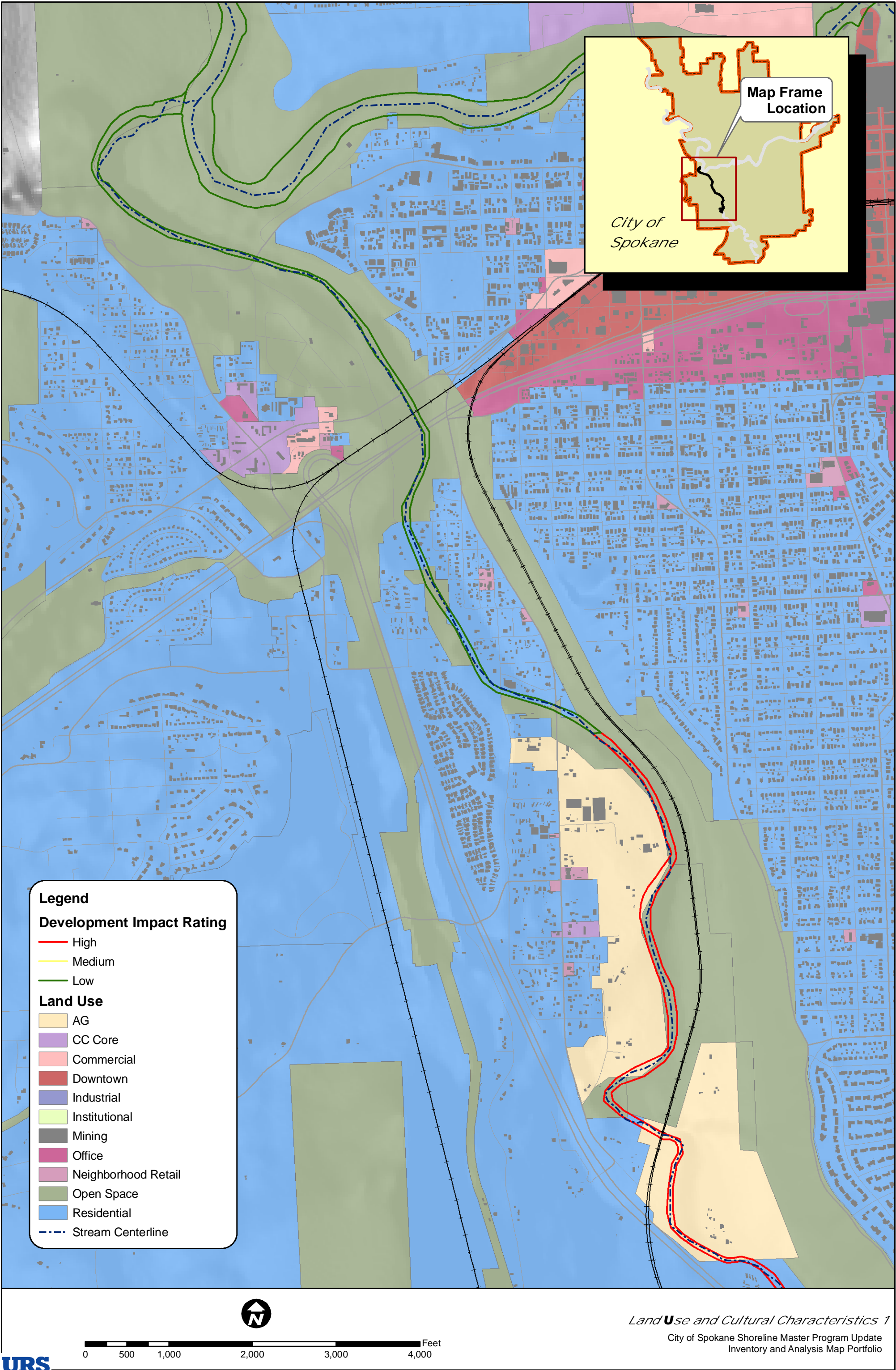
Neighborhood Retail

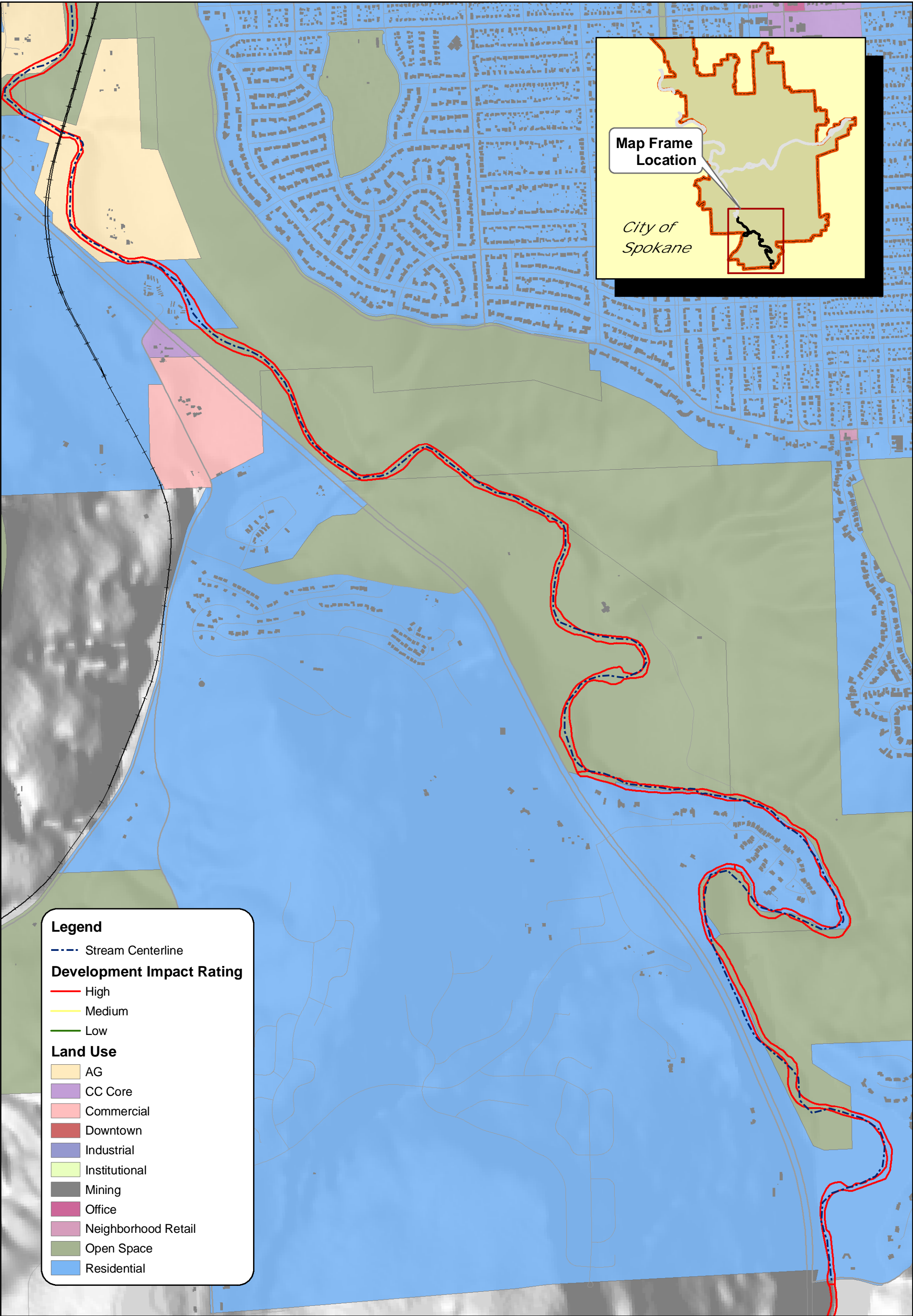
Open Space

Residential

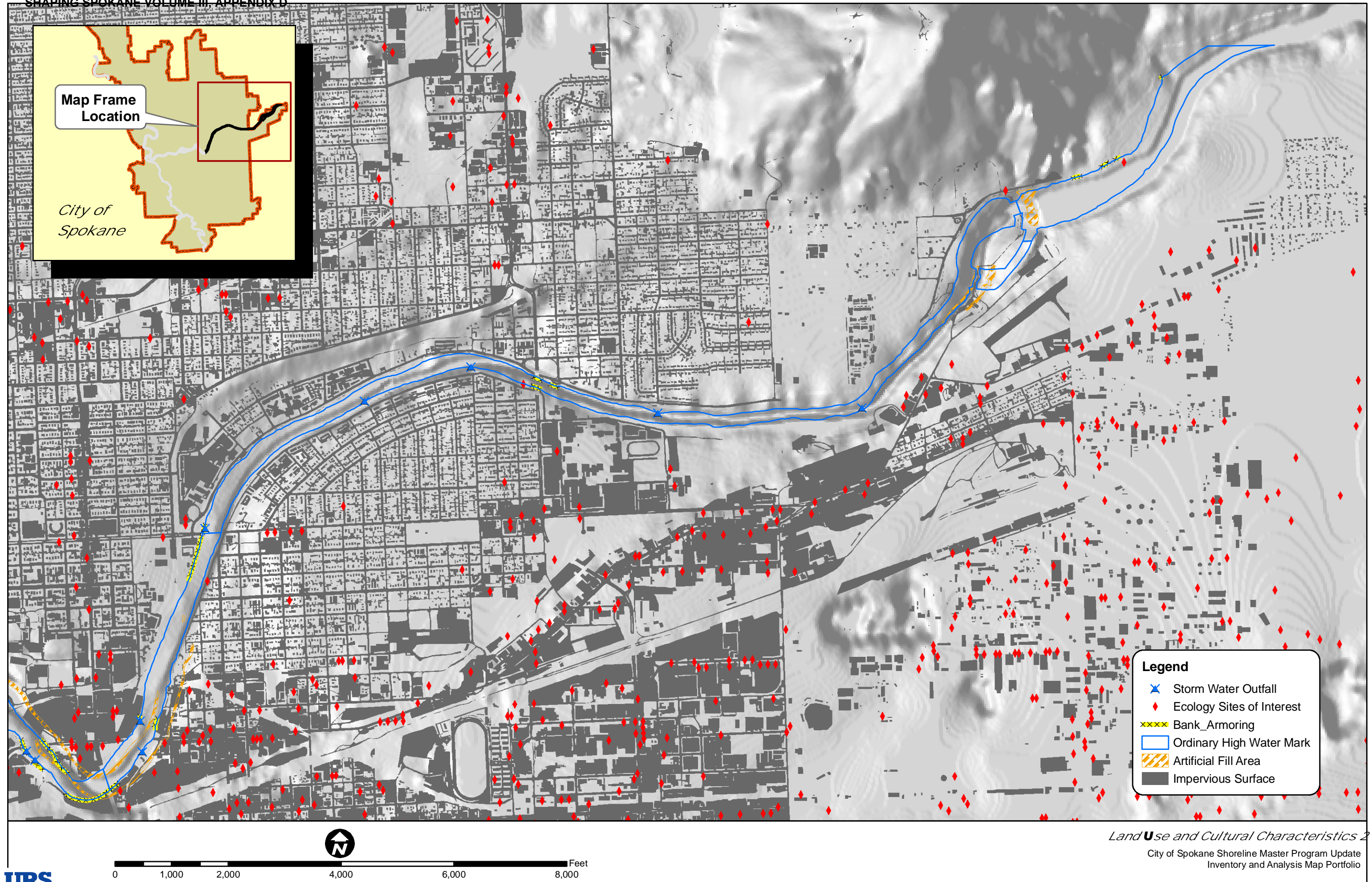


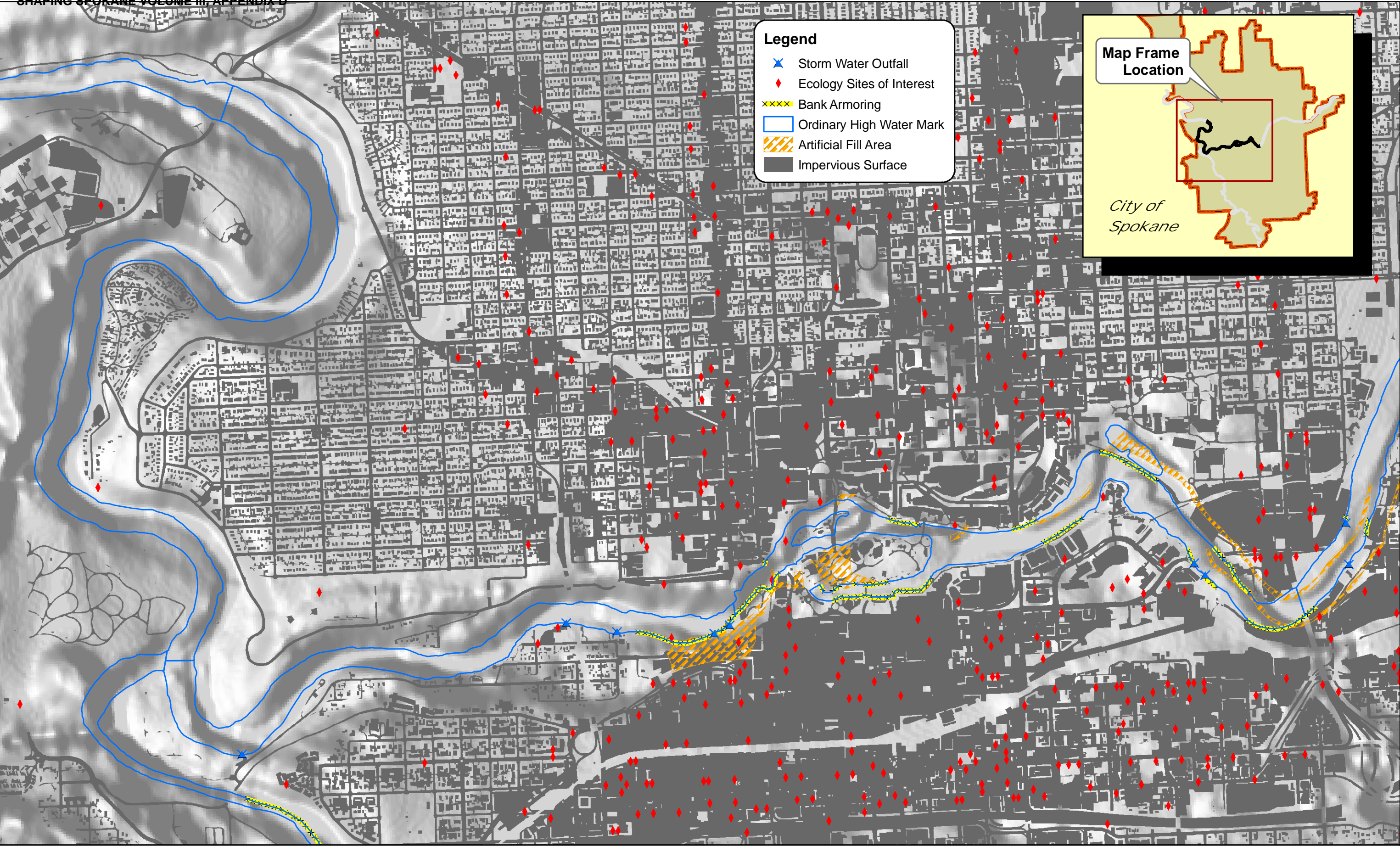


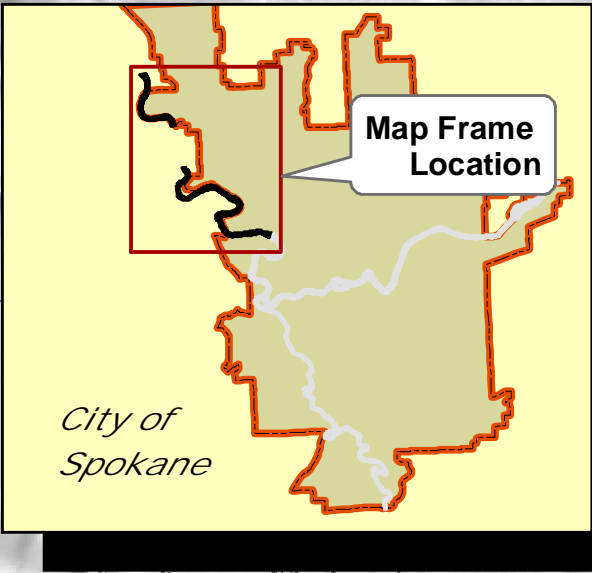
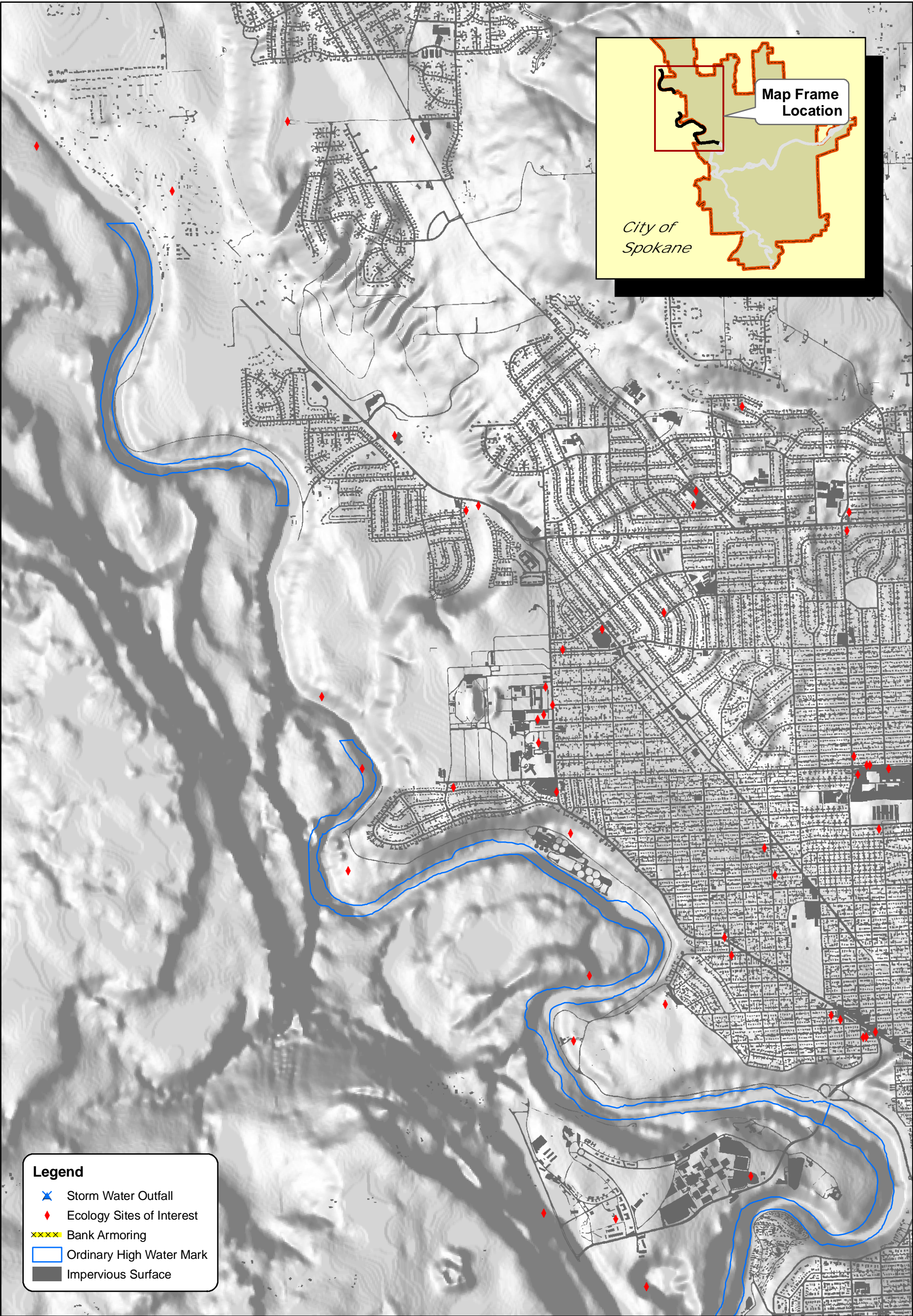




0 500 1,000 2,000 3,000 4,000 Feet

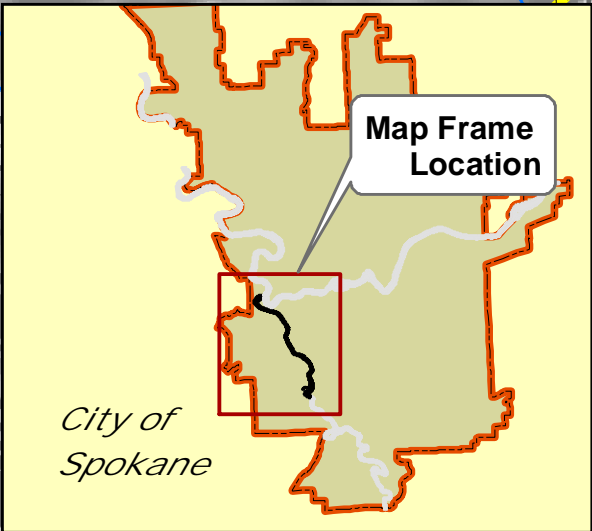
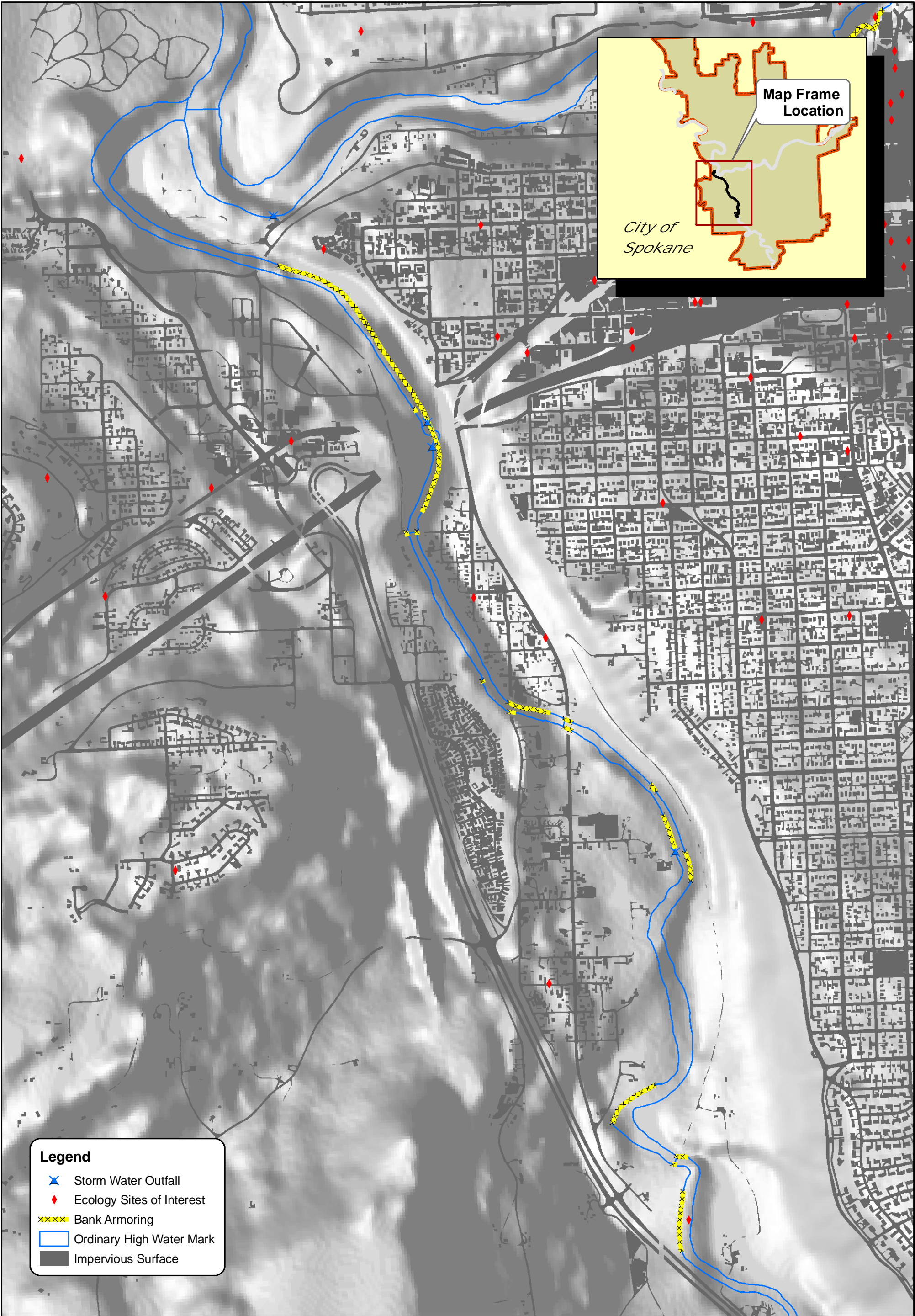






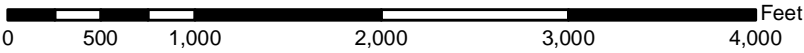
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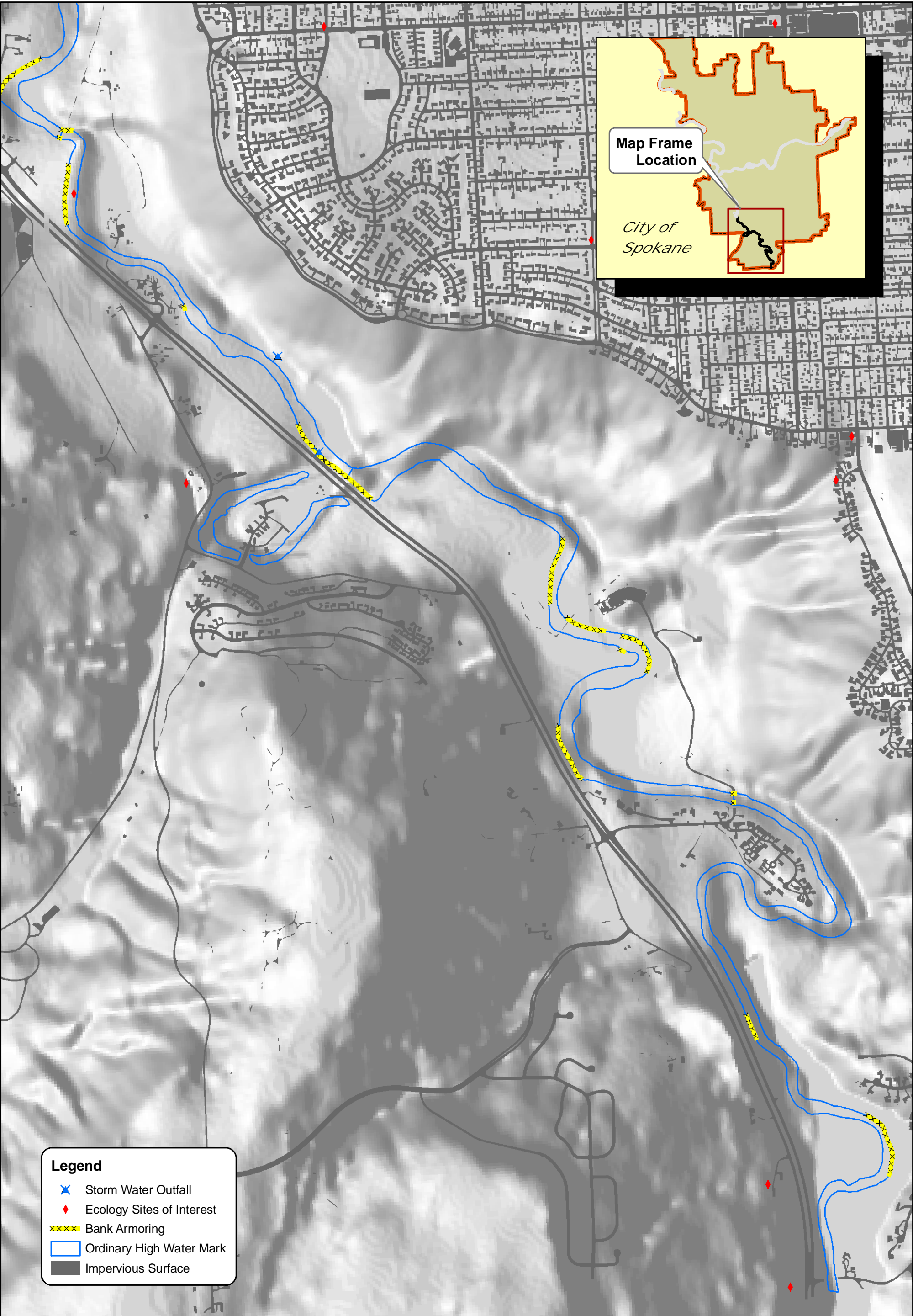
- Storm Water Outfall
- Ecology Sites of Interest
- Bank Armoring
- Ordinary High Water Mark
- Impervious Surface



Legend

- Storm Water Outfall
- Ecology Sites of Interest
- Bank Armoring
- Ordinary High Water Mark
- Impervious Surface

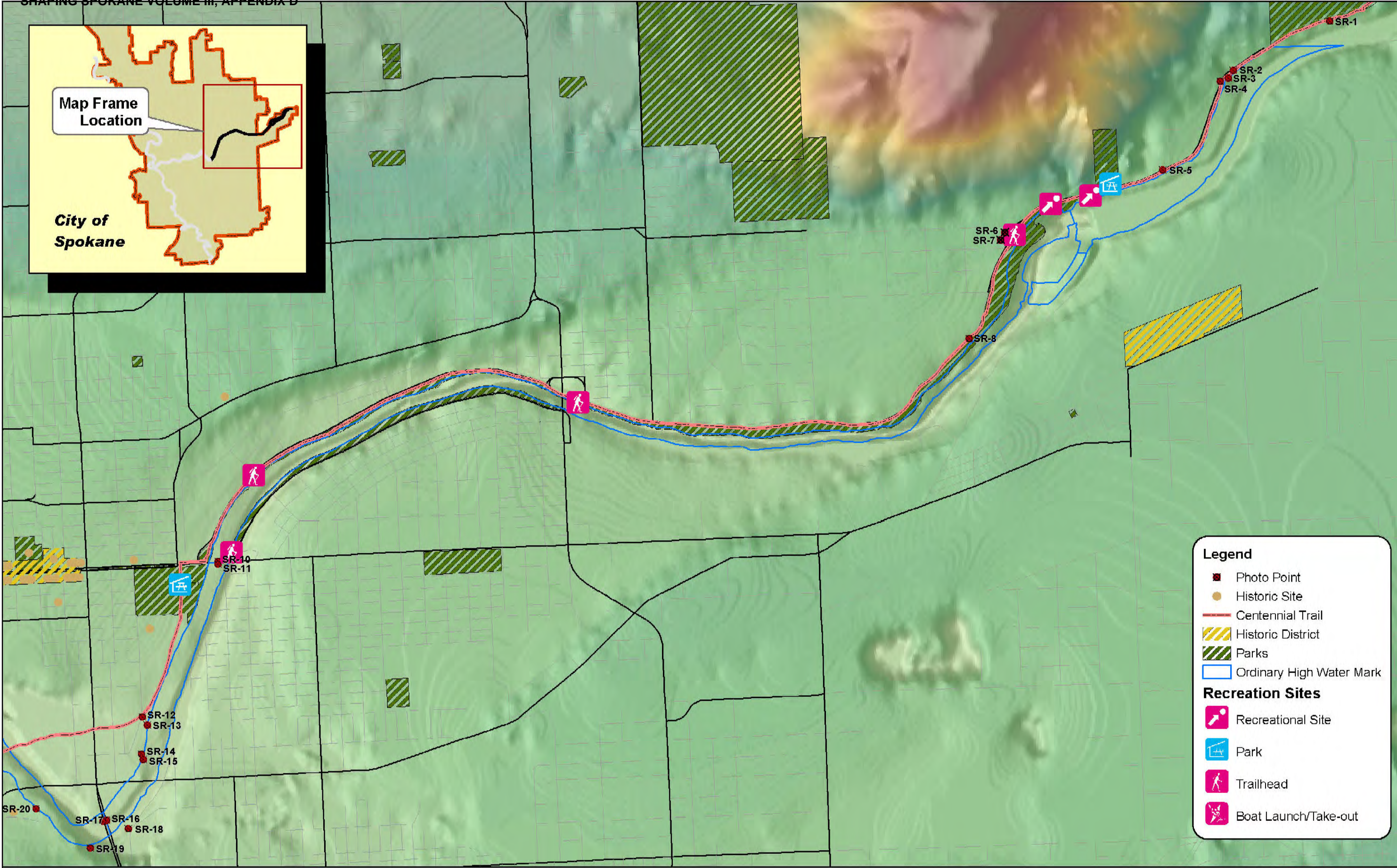




- Legend**
- Storm Water Outfall
 - Ecology Sites of Interest
 - Bank Armoring
 - Ordinary High Water Mark
 - Impervious Surface



0 500 1,000 2,000 3,000 4,000 Feet

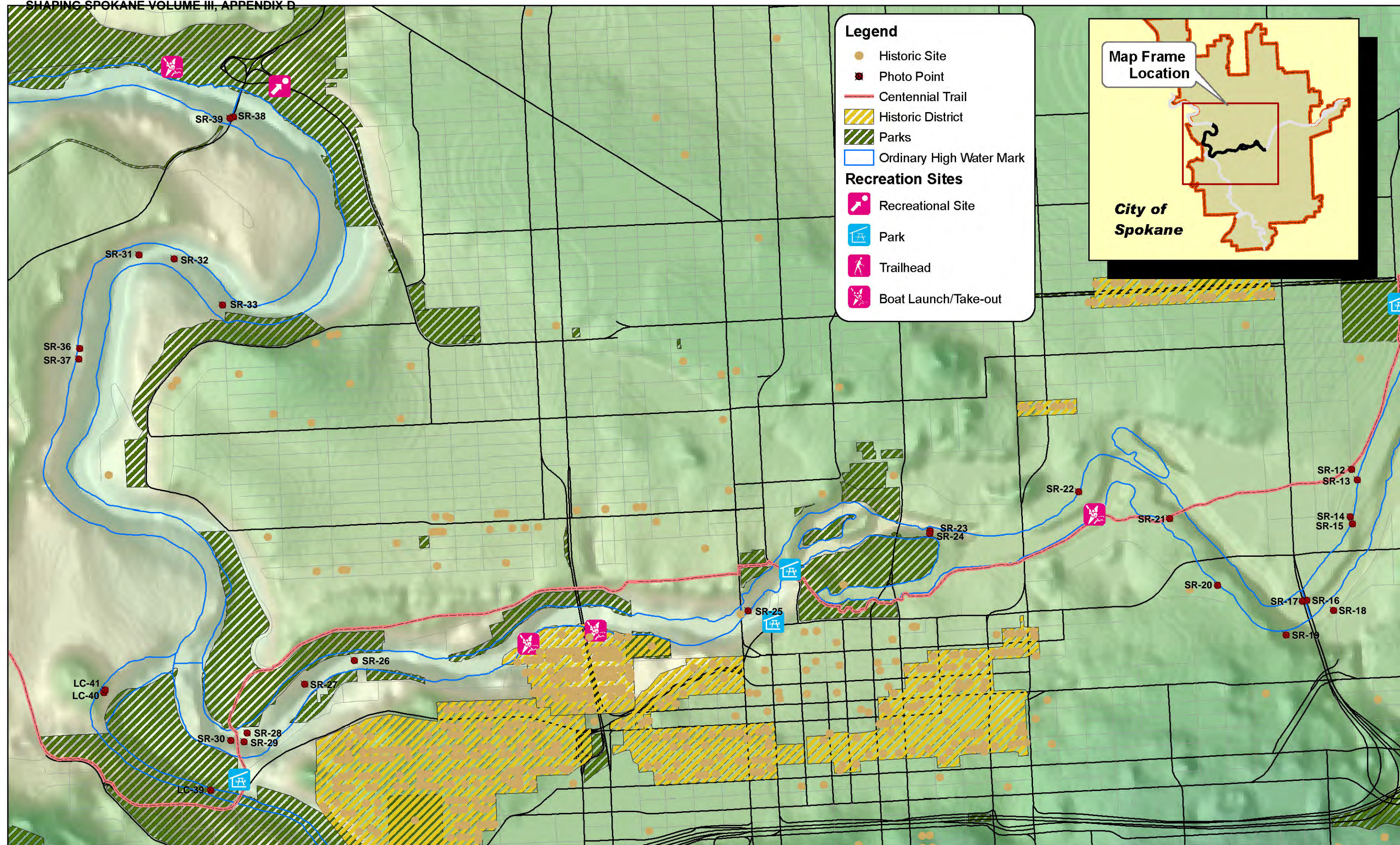


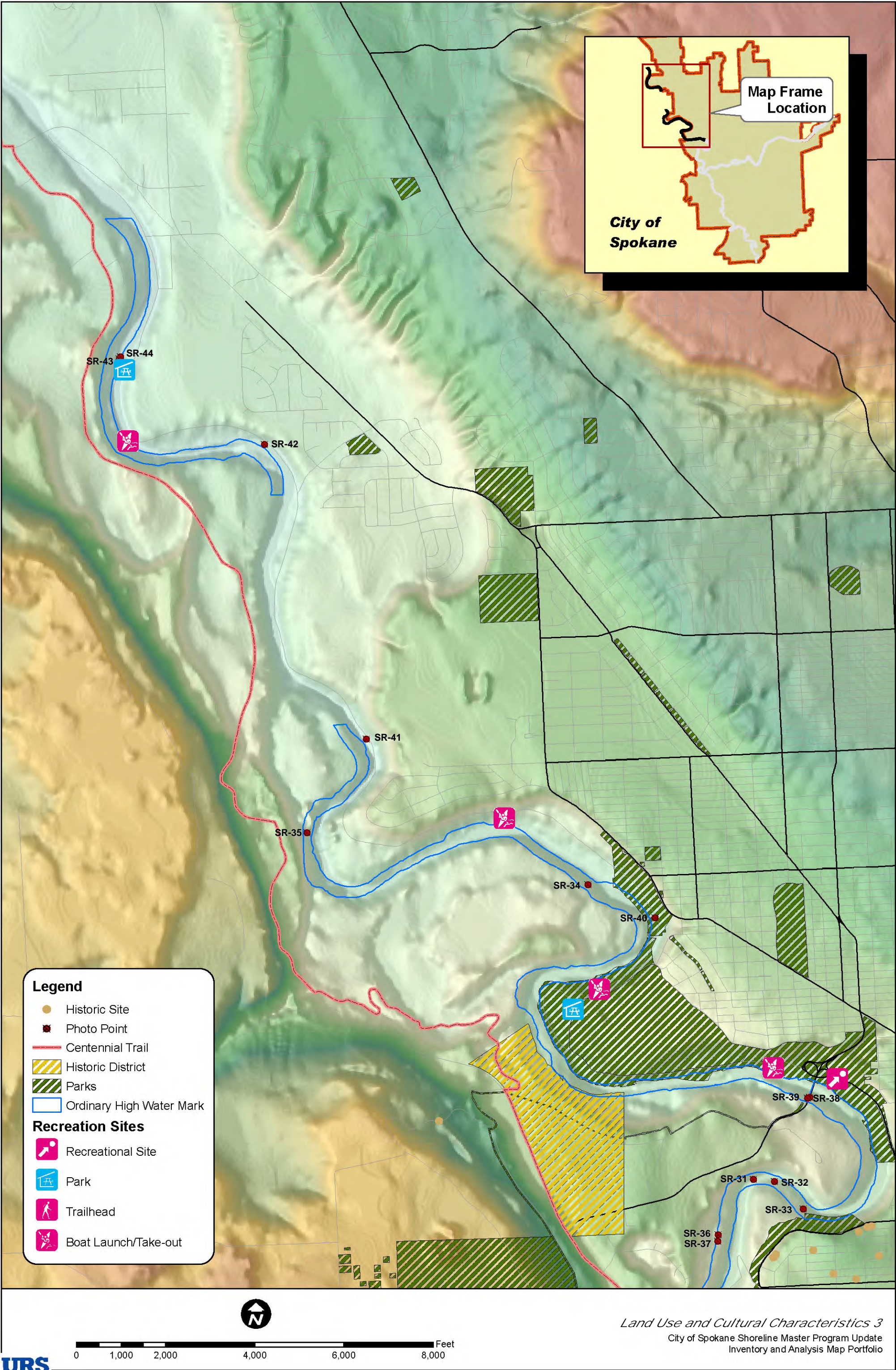
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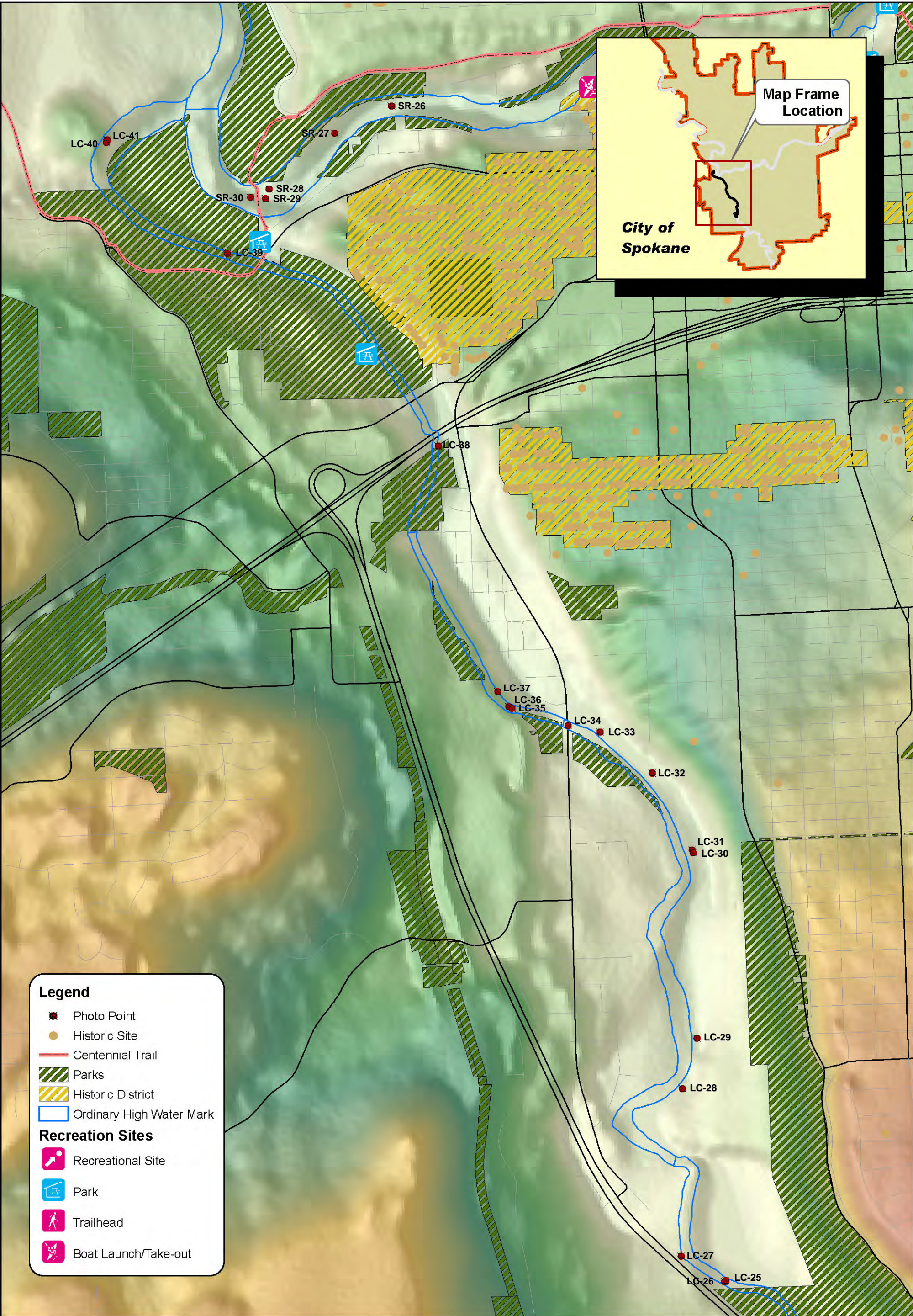
- Photo Point
- Historic Site
- Centennial Trail
- Historic District
- Parks
- Ordinary High Water Mark

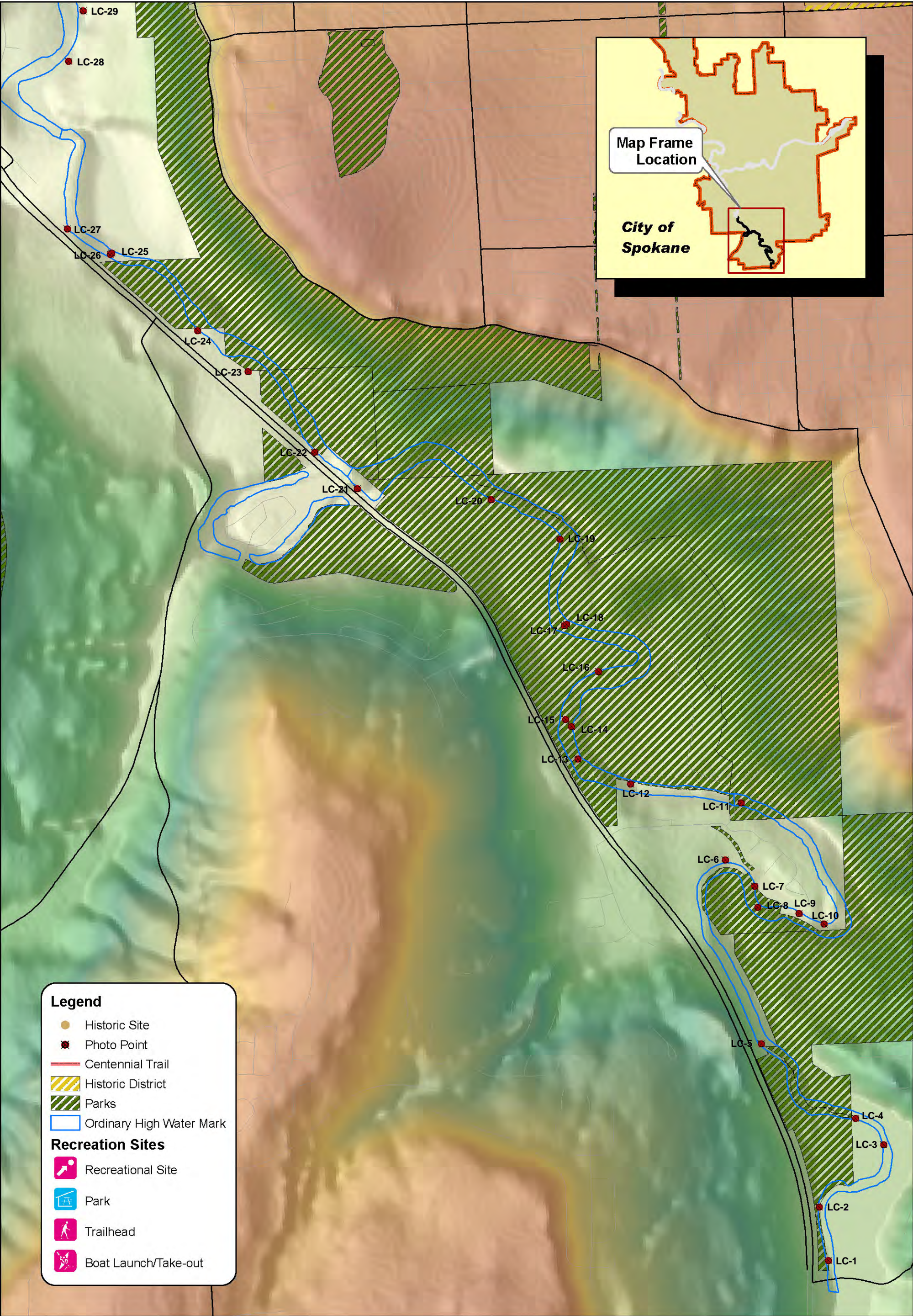
Recreation Sites

- Recreational Site
- Park
- Trailhead
- Boat Launch/Take-out











CITY OF SPOKANE SHORELINE MASTER PROGRAM UPDATE CUMULATIVE IMPACTS ANALYSIS

City of Spokane Planning Services Department
808 West Spokane Falls Boulevard
Spokane, Washington 99201

November 2008

Prepared by



920 North Argonne Road, Suite 300
Spokane, Washington 99212

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1.0 INTRODUCTION

The City of Spokane's Shoreline Master Program (SMP) provides the means to regulate future development within the City's shorelines jurisdiction, and complies with the requirements of the Washington State Shoreline Management Act (SMA) (RCW 90.58), and the 2003 Shoreline Master Program Guidelines, as reflected in the Washington Administrative Code [WAC] 173-26. The SMP update process included the following tasks:

- Inventory and analysis of shoreline conditions
- Designating shoreline environments
- Analysis of reasonably foreseeable future development, uses, and activities along the shorelines
- Developing shoreline goals and policies that provide guidance for the development, protection, and restoration of the shorelines
- Developing regulations based on environmental designations, goals, and policies reflecting no net loss of shoreline ecological functions
- Assessing cumulative impacts of future shoreline development and uses
- Developing a restoration plan

This report provides a summary of the cumulative impacts analysis and discusses monitoring activities to track potential cumulative impacts.

1.1 Report Purpose

The Shoreline Management Act Guidelines (Guidelines) require the analysis of cumulative impacts to ensure no net loss of ecological functions, and protection of other shoreline uses including public and recreational activities. Additionally, the Guidelines require that master programs contain goals, policies, and regulations that avoid adverse cumulative impacts and fairly allocate the burden of addressing cumulative impacts among the various development communities. Evaluation of such cumulative impacts shall consider:

- Current circumstances affecting the shorelines and relevant natural processes;
- Reasonably foreseeable future development and use of the shoreline;
- Beneficial effects of any established regulatory programs under other local, state, and federal laws.

The Guidelines also require that local governments consider the potential impacts of unregulated and exempt activities and identify a process for periodically evaluating cumulative effects of authorized development on shoreline conditions.

This report outlines how the City of Spokane has developed goals, policies and regulations that are protective of the shorelines and will result in no net loss of the City's shoreline ecological functions. If the Shoreline Master Program policies and corresponding regulations are adhered to, including restoration activities of shorelines, there should be no net loss of shoreline ecological functions. Monitoring activities within the shoreline jurisdiction plays an important role in evaluating cumulative impacts.

1.2 City of Spokane Shorelines

This section provides a brief description of the shorelines within the City of Spokane, including general shoreline characteristics and adjacent development and land uses. Detailed information is included in the Shoreline Inventory and Analysis (City of Spokane, 2006).

Properly functioning shorelines include a variety of shoreline ecological functions such as maintaining water quality and quantity, attenuation of high-energy flows, flood reduction, erosion control, and the provision of habitat and organic matter (food) for fish and wildlife. The riparian and hyporheic zones provide shade, filtering of surface water, structural stability of river banks, and water storage that helps to maintain base flows. Many ecological functions of river and stream corridors depend both on continuity and connectivity along the length of the shoreline and on the conditions of the surrounding land on either side of the river channel. See Appendix A, *Spokane River and Latah Creek Reach Maps*.

1.2.1 Spokane River

The Spokane River begins at Coeur d'Alene Lake, Idaho, flowing west to the City of Spokane where it turns north and then west, eventually emptying into the Columbia River. The watershed east of Spokane is approximately 4,290 square miles and includes the Coeur d'Alene, St. Joe, and St. Maries Rivers. Flows vary seasonally, reaching over 25,000 cfs in the spring to less than 1,000 cfs during the summer (USGS gauge 12422500). Six dams are located on the Spokane River. Post Falls Dam downstream from Coeur d'Alene Lake controls Spokane River flows for approximately six months during the summer and fall when flows are less than 5,000 cfs.

Within the city limits, the Spokane River is divided into the Upper Spokane (upstream from Division Street), the Middle Spokane (Spokane Falls area – Division Street to Monroe), and the Lower Spokane (downstream from Monroe) based on geology, land use, and vegetation.

The shoreline of the **Upper Spokane River** (Upriver Dam to the Division Street Bridge), is characterized by small- to medium-sized gravel banks with a few sandy beaches. The Upper Spokane has moderate- to well-vegetated river banks containing a variety of native and non-native plant species. Downstream of Hamilton Street, the river enters the basalt substrate that forms Spokane Falls. The Spokane County Proper Functioning Condition (PFC) Assessment, prepared by the Spokane County Conservation District (SCCD), rates the Upper Spokane reaches as being in Proper Functioning Condition and its ecological condition as generally fair.

The **Middle Spokane River** (downtown urban area), is characterized by basalt substrate that forms the river channel and creates Spokane Falls. The Spokane Falls are culturally and environmentally significant. This is the City Center, and its urban environment has resulted in numerous shoreline modifications over the past century. The SCCD PFC Study rates much of the Middle Spokane as being in Proper Functioning Condition and its ecological rating as poor to fair through much of its length.

The **Lower Spokane River** (downriver from the Monroe Street Bridge), is characterized by a deep, entrenched gorge cut through much of its length. The shoreline between Spokane Falls and the confluence with Latah Creek, known as the Great Gorge, is characterized by a steep bank partially created by fill placed there at the turn of the 20th century. The north shore is difficult to access and retains significant areas of native vegetation. The south slope adjacent to the Peaceful Valley Neighborhood is steep and heavily vegetated. Shorelines have been altered but retain a natural character.

Downstream from the Latah Creek confluence, much of the river has retained a natural character, although some residential and other development is present. This is apparently due to the high steep banks, limited road access, and the presence of Riverside State Park along much of this reach. The SCCD PFC Assessment rates the reaches in the Lower Spokane as being in Proper Functioning Condition and in good ecological condition, with much of it being considered high quality.

1.2.2 Latah Creek

Latah Creek originates in Idaho, flowing west/northwest into Washington State and drains into the Spokane River west of downtown Spokane, where the Spokane River bends north. It has a drainage area of approximately 430,000 acres (260,000 acres in Washington). Typically flows range between 200 cfs

during spring runoff to as low as two cfs during the summer months. Flows over 20,000 cfs have been recorded. Opportunities to increase summer flow have been discussed during Water Resource Inventory Area (WRIA) 56 planning activities.

Within the City limits, Latah Creek is divided into two sections, Upper Latah Creek - Hatch Road to the Empire Way Bridge, and the lower section, Lower Latah Creek - Empire Way Bridge to the confluence based on geology, land use, and vegetation.

Upper Latah Creek is characterized by high banks to the east and SR-195 to the west. The upstream section actively meanders as evidenced by gravel bars and undercutting. Existing low-development density allows the stream to function somewhat naturally within the limits of SR-195 and the steep bluff; however, SR-195 has substantially reduced the active meander zone and floodplain of Latah Creek. Vegetation within the creek is dominated by non-native reed canarygrass and native coyote willow in the riparian area, and a mix of native/non-native vegetation in the upland areas.

Lower Latah Creek is characterized by relatively stable banks, many of which have been altered for flood protection and railroad fill. An exception is the steep bank at the confluence with the Spokane River which is actively eroding. There is semi-natural parkland located along this section of the creek.

1.3 Determination of Cumulative Impacts

1.3.1 Current Circumstances Affecting Shoreline Conditions

The current circumstances (existing conditions) affecting shoreline conditions includes the shoreline inventory information and the shoreline uses. This information provides the basis for no net loss of shoreline ecological conditions.

1.3.1.1 Shoreline Inventory

The Shoreline Inventory and Analysis (City of Spokane, 2006) provides a comprehensive inventory and characterization of the existing conditions of the City's shorelines. The inventory includes records research gathered from the City and other land and natural resource agencies. This task also included field surveys and a delineation of the Ordinary High Water Mark (OHWM). The inventory provides the baseline for the no net loss concept central to the SMA, providing a snapshot of existing conditions of the shorelines. The shoreline inventory was used to define the shoreline jurisdiction, define the OHWM and develop environmental designations. The shoreline inventory was a key element used to update shoreline goals, policies, and regulations.

Tables 1-1 and 1-2, Spokane River and Latah Creek Inventory Summaries, summarize the major parameters of the inventory and analysis. This information can be used to quantify measurable shoreline ecological function losses and gains in the future by reassessing future conditions using similar methodology when the SMP is updated.

1.3.1.2 Shoreline Uses and Access

The **Upper Spokane** is developed with a variety of residential, commercial, and industrial land uses. In general, the Upper Spokane is used extensively by the public due to Upriver and Riverton Drives and the Centennial Trail paralleling the river, providing almost unlimited public access. Dispersed use is relatively intense due to adjacent residential development. Common recreational shoreline uses include jogging, walking, sightseeing, picnicking, and swimming according to the Avista Recreation Facility Inventory and User Surveys Report (April 2004). Other common uses include angling, birding, and canoeing/kayaking. Transportation and major utility corridors are present on both sides of the river within the 200-foot shoreline buffer. Large portions of the shoreline are publicly owned and managed.

The **Middle Spokane** is characterized by Avista hydropower operations, commercial land use, and high-density residential developments. Roads, paved parking, and bridges impact the shorelines within this

reach. Substantial portions of the shoreline are privately owned. Public access to the shoreline is generally good due to the City-owned Riverfront Park and State-owned Centennial Trail located along much of this section. In general, high intensity recreation and community uses are found in this area. Direct access to the river is limited in some locations due to steep, nearly vertical banks and hydro-electric generation facilities. Though much of the area is already developed, development pressure is considered to be high in this vicinity.

Along the **Lower Spokane** public access is available but is somewhat more difficult between Monroe Street and Meenach Bridge due to steep banks, private properties, and the road system which does not parallel the river in all places. Downstream of Spokane Falls the Peaceful Valley Neighborhood is located in a low-lying level area at the base of the south slope. Use is considered moderate consisting mostly of neighborhood residents. Substantial residential and mixed-use development is anticipated at the east end of this reach near the City Center. Downstream of Meenach Bridge, Riverside State Park is the major land use. Aubrey White Parkway parallels the east bank of the river and public access is good.

Recreational use of this section of the river is considered moderate. Much of the area is publicly owned and accessible. Common recreational uses include jogging, walking, sightseeing, picnicking, and swimming according to the Avista Recreation Facility Inventory and User Surveys Report (April 2004). Other common uses include angling, birding, and canoeing/kayaking. The Lower Spokane River and its shorelines are an important recreational and natural area for the City and the region.

Along **Upper Latah Creek** much of the land along the upper reach is public with large areas of undeveloped parkland. The City's Creek at Qualchan Golf Course is located here. Development pressure is anticipated along this section of the creek. The shorelines and adjacent upland areas along Upper Latah Creek are used by residents of Latah Valley and Spokane's South Hill.

Table 1-1 Spokane River Inventory Summary

	SR-1 Upriver Dam Pool	SR-2 Upriver Dam to Mission Ave.	SR-3 Mission Ave. to Hamilton Street	SR-4 Hamilton St. to Monroe St.	SR-5 Monroe St. to Latah Creek	SR-6 Latah Creek to Meenach Bridge	SR-7 Meenach Bridge to City Limits
Area (acres) (1)	117	262	80	183	143	220	550
Open Space (2)	9%	58%	39%	26%	84%	69%	52%
Impervious Area	2%	15%	21%	24%	17%	3%	2%
Transportation Impacts	North Bank- High	High	Moderate	High	Moderate	Low	Moderate
Utility Impacts	Low	High	Moderate	High	Moderate	Low	Moderate
Shoreline Armoring	4%	2%	12%	28%	8%	0	0
Parkland	4 acres	68 acres	4 acres	29 acres	42 acres	30 acres	68 acres
Formal Access (3)	2 locations	5 locations	0 locations	2 locations	2 locations	0 locations	5 locations
Erosive Soils	<1.0%	<1.0%	0	<1.0%	33%	23%	17%
Vegetation – Riparian(4)	4%	13%	8%	5.3%	14%	18%	7%
Vegetation- Upland (4)	6.6%	17%	6%	7.3%	29%	39%	17%
Vegetation – Native(5)	6%	61%	68%	80%	N/A	75%	49%
Priority Habitats	None	None	Yes	Yes	None	Yes	Yes
Hydrologic (SCCD-PFC)	Properly Functioning	Properly Functioning	Properly Functioning	Properly Functioning	Properly Functioning	Properly Functioning	Properly Functioning
Ecological (SCCD Rating)	Fair	Fair	Fair	Poor to Fair	Poor to Fair	Good	Good
Vegetation	Discontinuous	Narrow/Continuous	Narrow/Continuous	Narrow/Continuous	Diverse/Well Established	Diverse/Well Established	Diverse/Well established
Riparian Habitat	Intact/altered	Narrow/Well Developed	Intact	Limited	Excellent	Excellent	Excellent

Notes:

1. Area within shoreline jurisdiction.
2. Open Space from City land use maps.
3. Informal access is generally good along most shorelines.
4. Percentages reflect areas identified as being healthy, shoreline related and are a percentage of the entire 200 foot shoreline jurisdiction.
5. Native percentages are based on test plots developed during the inventory.

Table 1-2 Latah Creek Inventory Summary

	LC-1 Hatch Road to Golf Course Bridge	LC-2 Golf Course Bridge to Marshall Creek	LC-3 Marshall Creek to RR Bridge	LC-4 RR Bridge to Empire Way	LC-5 Empire Way to 11th Street	LC-6 11th Street to Spokane River
Area (acres) (1)	173	163	110	120	54	142
Open Space (2)	37%	85%	36%	52%	20%	98%
Impervious	8%	5%	10%	4%	15%	3%
Transportation Impacts	High	High	High	Moderate	Moderate	Moderate
Utility Impacts	Moderate	Moderate	Moderate	High	High	High
Shoreline Armoring	7%	19%	16%	13%	12%	25%
Parkland	40%	84%	40%	5%	15%	70%
Formal Access	1 location	Golf Course	None	None	1 location	None
Erosive Soils	30%	37%	6%	6%	0.3%	22%
Vegetation – Riparian(3)	16%	20%	19%	16%	9%	9%
Vegetation- Upland(3)	27%	31%	31%	31%	18%	21%
Vegetation – Native(4)	17%	25%	40%	59%	20%	41%
Priority Habitats	Yes	Yes	None	None	None	Yes
Hydrologic (SCCD-PFC)	Functional at Risk	Properly Functioning	Functional at Risk	Functional at Risk	Properly Functioning	Properly Functioning
Ecological (SCCD Rating)	Fair to Good	Poor to Fair	Poor to Fair	Poor to Fair	Fair to Good	Fair to Good
Vegetation	Adequate	Discontinuous/impacted	Discontinuous/impacted	Discontinuous	Continuous/impacted	Adequate
Hyporheic	Adequate	Adequate	Adequate	Adequate	Adequate	Good
Riparian Habitat	Intact/altered	Disturbed	Intact	Intact	Intact	Intact/altered

Notes:

1. Area within shoreline jurisdiction.
2. Open Space from City land use maps.
3. Percentages reflect areas identified as being healthy, shoreline related and are a percentage of the entire 200 foot shoreline jurisdiction.
4. Native percentages are based on test plots developed during the inventory.

Campion Park, a city park with little formal improvements is used by birders; and mountain bikers and recreational paddlers as an access point.

The upstream area of **Lower Latah Creek** is predominately low to moderate-density residential and includes the Latah Creek Neighborhood. Access is generally adequate from public roads but movement along the shoreline is limited. The shorelines have been generally altered to reduce flooding, to accommodate private uses, railroads, and utilities. The east side of the valley is predominately a railroad grade. Development pressure is anticipated along this section of Latah Creek. Downstream of the 11th Street Bridge, Latah Creek flows through the City's High Bridge Park/Peoples Park to its confluence with the Spokane River. Access is good and use is moderate to high in this area

Recreation: The Avista recreational inventory for the Spokane River estimated annual use of the river system is 722,000 *use visits*. This includes the river between Post Falls Dam and Nine Mile Dam. By way of comparison, the same study estimated approximately 800,000 use visits at Coeur d'Alene Lake and the river above Post Falls Dam. No comparative information has been gathered for Latah Creek. The Avista study inventoried use of the entire system, including Coeur d'Alene Lake and the upstream tributaries. The survey indicated that existing activities along the shorelines include:

Table 1-3 Avista Spokane River Recreation Survey

Activity	Percent of Respondents Participating
Swimming	64
Picnicking	40
Sightseeing	42
Hiking	38
Bicycling	27
Nature Study/Wildlife Viewing	26
Camping	24
Boat Fishing	30
Bank/Pier Fishing	24
Canoeing/kayaking	16

Avista Recreation Facility Inventory and User Surveys April 2004

1.3.2 Reasonably Foreseeable Future Development and Use of the Shoreline

This section provides a summary of Reasonably Foreseeable Future Development and Uses within the City's shoreline jurisdiction. Existing land uses within the shoreline jurisdiction were mapped and tabulated during the shoreline inventory (City of Spokane Shoreline Management Program Update 2008). Based on these baseline land uses, analysis of the shoreline jurisdiction overlaid on the future land use map from the City of Spokane Comprehensive Plan, and current zoning, reasonably foreseeable development and uses in the shoreline jurisdiction can be estimated. This information can be used to estimate areas where incremental loss of shoreline ecological function could potentially occur if regulations, including mitigation, are not in place that reflect the goals and policies of the Shoreline Master Program.

GIS mapping data provided the basis for future land use analysis along the shoreline jurisdiction. Existing land use maps and Spokane County parcel maps were used to identify existing land uses, acreages, percentage of occupied and vacant lands, and percentage of public and private properties within the shoreline jurisdiction. Table 1-3 Spokane River Land Uses summarizes this information for the

Spokane River and Table 1-4 Latah Creek Land Uses for Latah Creek. Appendix B includes the Land Use Capacity Maps that show the land uses along the City shoreline jurisdiction.

This information identifies approximately 350 acres (42 percent) of the 850 shoreline acres along the Spokane River and 195 acres (49 percent) of the 390 acres along Latah Creek as conservation open space, open space, potential open space or agricultural lands, both publicly and privately owned. The City of Spokane owns approximately 30 percent of the Spokane River and 32 percent of the Latah Creek shorelines. The City-owned land is mostly designated for conservation and park use. An additional 22 percent of land on each shoreline is noted as public right-of-way. In total, the City owns 675 acres of the 1,240 acre shoreline jurisdiction. Additional open space land is associated with Riverside State Park and the Centennial Trail. This land is anticipated to remain in its current use.

Private property is located within the remainder of the shoreline jurisdiction. The Spokane River includes a total of 240 acres of private property and 102 acres along Latah Creek. Vacant, private land consists of 82 acres (10 percent) along the Spokane River, and 46 acres (12 percent) along Latah Creek. Agricultural, conservation open space, open space, and potential open space are not included in the acreage total, assuming that they will remain in their current use.

Based on the City GIS land use analysis, vacant, privately-owned land with the potential for new development includes 128 acres, or 10 percent of the City shorelines. The largest contiguous privately owned vacant properties include:

- Felts Field under Spokane International Airport jurisdiction
- Spokane Community College
- Browns Building Supply
- Greenwood Cemetery
- Downstream from Spokane Falls Community College
- Riverside State Park downstream from Gun Club Road
- Latah Creek downstream from Hatch Road to the Qualchan Golf Course
- East bank of Latah Creek downstream from Marshall Creek zoned agricultural,
- West bank of Latah Creek between Inland Empire Way and Latah Creek, zoned agricultural

Based on the inventory, the areas anticipated to have the most development potential include Spokane Community College, the University District between Mission Street and Division Street, and the Sisters of the Holy Name property west of Meenach Bridge. Section 4.0, Table 4-1 provides a discussion using these properties as examples of how the updated SMP regulations provide protection to the shorelines in an effort to achieve no net loss in the shoreline environment.

Table 1-4 Spokane River Land Uses

City Owned Properties Spokane River (in acres)			
Land Use	Occupied	Vacant	Total
Commercial	0.00	0.00	0.00
Conservation OS	25.96	140.49	166.44
Downtown	0.88	0.08	0.97
HI	0.00	0.55	0.55
Institutional	13.43	2.78	16.21
LI	23.64	5.94	29.58
Open Space	7.08	29.44	36.52
R 15-30	0.03	2.08	2.11
R 4-10	0.00	4.95	4.95
Total Land	71.01	186.31	257.32
Privately Owned Properties			
Land Use	Occupied	Vacant	Total
CC Core	8.07	2.41	10.48
Commercial	4.58	1.40	5.98
Conservation OS	46.66	84.78	131.44
Downtown	20.44	4.21	24.65
HI	0.69	6.38	7.07
Institutional	51.32	6.35	57.67
LI	12.16	32.64	44.80
Office	0.00	0.00	0.00
Open Space	5.19	13.13	18.32
R 10-20	2.39	0.00	2.39
R 15+	5.76	4.85	10.61
R 15-30	23.17	4.27	27.44
R 4-10	29.52	19.65	49.17
Total Land	209.93	180.08	390.01

Note: Does not include public right-of-ways.

Table 1-5 Latah Creek Land Uses

City Owned Properties Latah Creek (in acres)			
Land Use	Occupied	Vacant	Total
Conservation OS	0.32	68.04	68.36
Open Space	0.00	55.43	55.43
Potential OS	0.00	10.29	10.29
R 4-10	2.52	2.96	5.48
Total Land	2.84	136.73	139.57
Privately Owned Properties			
Land Use	Occupied	Vacant	Total
AG	19.14	14.95	34.09
CC Core	0.00	0.22	0.22
Commercial	2.29	1.25	3.55
Conservation OS	0.00	30.44	30.44
Open Space	0.03	13.90	13.93
Potential OS	0.00	15.56	15.56
R 15+	0.00	0.05	0.05
R 4-10	53.27	44.93	98.20
Total Land	74.74	121.30	196.04

Note: Does not include public right-of-ways.

1.3.3 Beneficial Effects of Established Regulatory Programs

Provisions from existing city land use and development regulations, federal and state regulations and programs, and other local conservation and restoration programs provide protection of the City shorelines. Established local regulatory programs include, but are not limited to the following:

City of Spokane Comprehensive Plan policies that directly affect the location and scale of development.
City of Spokane Critical Areas Ordinance (17E.010, 17E.020, 17E.030, 17E.040, 17E.070)

City of Spokane Shoreline Master Program regulations including:

- Vegetation Conservation and Replacement 17E.060.230
- Mitigation Sequencing 17E.060.220
- Flood Hazard Reduction regulations 17E.060.190
- Water Quality and Stormwater regulations 17E.060.200
- Shoreline Construction Site Plan 17E.060.250
- Shoreline Restoration Fund 17E.060.270

City of Spokane Municipal Code (Building permits, including clearing and grading standards; conditional use permits and variances.)

Federal, state and local regulations and other programs also provide mechanisms that aim to avoid adverse impacts to shoreline ecological functions. In addition to local regulations, several state and federal agencies have regulatory authority over resources within the City's shoreline jurisdiction. These regulations help manage potential cumulative impacts to shorelines. The following local, state, and

federal regulations may apply to activities and uses within the City's shoreline jurisdiction to avoid impacts.

Spokane County

- Countywide Planning Policies and Environmental Analysis for Spokane County, 1994
- Spokane County Shoreline Management Program

State Regulations

- Growth Management Act
- Shoreline Management Act
- SEPA – Washington State Department of Ecology (Ecology)
- JARPA - Ecology
- 401 Water Quality Certification - Ecology
- Hydraulic Project Approval (HPA) – Washington State Fish and Wildlife
- Model Toxics Control Act - Washington State CTED/Ecology – Brownfields Program

Federal Regulations

- NEPA (if federal funding or agencies involved) - EPA
- Endangered Species Act – US Fish and Wildlife
- Clean Water Act Section 404 Permit– U.S. Army Corps of Engineering (Corps)
- CERCLA (Brownfields) – EPA
- Section 106 of the National Historic Preservation Act – (Adverse impacts to cultural resources eligible for inclusion in the National Register of Historic Preservation)
- LWCF Section 6(f) – Impacts on Land and Water Conservation Fund Act funded outdoor recreation properties.
- NPDES, Stormwater and Wastewater – EPA
- FEMA

2.0 ANALYSIS OF CUMULATIVE IMPACTS

The Shoreline Management Act Guidelines require, “analysis of cumulative impacts to ensure no net loss of shoreline ecological functions and protection of other shoreline functions and/or uses including public and recreational uses. Additionally, the Guidelines require that master programs contain goals, policies, and regulations that avoid adverse cumulative impacts, and to fairly allocate the burden of addressing cumulative impacts among the various development communities. Evaluation of such cumulative impacts shall consider:

- Current circumstances affecting the shorelines and relevant natural processes;
- Reasonably foreseeable future development and use of the shoreline;
- Beneficial effects of any established regulatory programs under other local, state, and federal laws.”

The Guidelines also require that local governments consider the potential impacts of unregulated and exempt activities and to identify a process for periodically evaluating cumulative effects of authorized development on shoreline conditions.

This cumulative impacts assessment uses these considerations as a framework for evaluating potential long-term impacts to shoreline ecological functions and processes that may result from development or activities under the proposed SMP guidelines and regulations over time.

2.1 Current Circumstances

Existing conditions are reflected in the existing characteristics of the shoreline as documented in the Shoreline Inventory and Analysis prepared as part of the Shoreline Master Program update in 2008. This shoreline inventory is considered the baseline for future shoreline inventories and conditions analysis. Section 1.3.1 of this report provides summary information on the current circumstances affecting the shorelines.

2.2 Reasonably Foreseeable Future Development

Foreseeable future development and activities are discussed in Section 1.3.2 of this report. Approximately fifty four percent of the City shorelines are owned by the City and this land is anticipated to remain in its current use. Approximately 128 acres, or ten percent, of the shorelines are vacant and have the potential for new development. The remaining shoreline areas are located in Riverside State Park, along the Centennial Trail, or are currently developed.

2.3 Regulatory Programs

Local, State, and Federal regulatory programs are in place that provide beneficial effects to City shorelines. The following sections describe the City Goals, Policies, and Regulations that provide the framework for no net loss of shoreline ecological functions.

2.3.1 Policies and Regulations

It is important to recognize that the ecological processes and functions that occur within the SMP jurisdiction are affected by processes within the entire watershed, not only those that take place within the regulated shoreline. The SMP jurisdiction affects the ecological processes immediately adjacent to the shore and generally within 200 feet of the water. Regulations within the shoreline jurisdiction can have an important local influence but often cannot fully compensate for the activities and processes that occur outside the shoreline jurisdiction.

Proposed City Shoreline regulations provide mechanisms that aim to avoid cumulative adverse impacts to shoreline ecological functions, and conform to SMP goals and policies, as required under RCW 90.58.100, which states, “In order to implement the directives of the SMA, master program regulations shall:

- (A) Be sufficient in scope and detail to ensure the implementation of the SMA, statewide shoreline management policies of this chapter, and local master program policies;
- (B) Include environmental **designation regulations** that apply to specific environments consistent with WAC 173-26-211;
- (C) Include **general regulations and use regulations** that address issues of concern in regard to specific uses, and shoreline modification regulations;
- (D) Design and implement regulations and **mitigation standards** in a manner consistent with all relevant constitutional and other legal limitations on the regulation of private property.”

2.3.2 Goals and Policies from the Comprehensive Plan – Shorelines

Chapter 14.0

The Shoreline Management Act requires that the SMP identify and establish goals and policies for major shoreline development, uses, and impacts that could occur within the City’s shoreline jurisdiction. Shoreline goals and policies establish broad shoreline management directives, and are statements of intent that direct or authorize a course of action, or specify criteria for regulatory or non-regulatory action to protect shoreline functions.

The City developed goals, policies, and regulations for the shoreline jurisdiction. The SMP states under General Goals and Policies, that “the SMP is to enhance the Spokane River and Latah Creek shorelines by establishing and implementing goals, policies, and regulations which promote a mixture of reasonable and appropriate shoreline uses that improve the City’s character, foster its historic and cultural identity, and conserve environmental resources.” The goals, policies and regulations contained in the updated SMP are intended to result in no net loss to the shoreline ecosystem. Consideration of the no net loss policy was an integral part of the development of these goals, policies and regulations.

As part of the public process for the SMP update, goals and policies of the SMP were developed by a team of 26 members of the community working with City staff. These goals and policies address the requirements of the Shoreline Management Act, and reflect the desires of the community.

Goals and policies of the City’s Shoreline Master Program are an element of the City’s Comprehensive Plan. Shoreline policies provide a foundation for SMP regulations. All other portions of the SMP (when adopted), including use regulations, are considered part of the City’s development regulations.

2.3.3 Shoreline Regulations

The principle that regulation of development and shoreline uses shall achieve no net loss of shoreline ecological function requires that shoreline master program goals, policies and regulations address the cumulative impacts on shoreline ecological functions that would result from future shoreline development and uses that are reasonably foreseeable. In the event that measurable losses to shorelines are noted during future SMP updates, future policy and regulation amendments may be required.

The principle of regulating for no net loss of shoreline ecological function has been achieved by complying with guidelines found in the Comprehensive Process to Prepare or Amend Shoreline Master Programs WAC 173-26-201(2)(a); Governing Principles of the Guidelines WAC 173-26-186(8)(d)(i-iii); and the Shoreline Management Act of 1971 RCW 90.58.100(1).

Applicable SMP regulations are listed in Appendix A, Spokane Municipal Code Title 17E.060 Shoreline Regulations.

The City of Spokane’s Shoreline Master Program contains policies and guidance for, capital facilities; circulation; conservation; economic development; flood hazard reduction; historic/cultural resources,

scientific opportunities, educational opportunities; public access; recreation; and restoration of the shoreline.

2.3.4 Critical Areas Ordinance

Spokane's Critical Areas Ordinance (CAO) also provides regulations for development along the City shorelines. (See following paragraph). Designated critical areas within the shoreline jurisdiction will be administered as part of the SMP using the CAO guidelines. Protection of critical areas within the shoreline jurisdiction transfers to the SMP once Ecology adopts the SMP.

"The City of Spokane Critical Areas Ordinance in Title 17E, effective January 6, 2008 as now constituted or hereafter amended, are herein incorporated into the Shoreline Master Program except as noted below:

- If provisions of the Critical Areas Ordinance and other parts of the SMP conflict, the provisions most protective of the ecological resources shall apply, as determined by the City;
- Provisions of the Critical Areas Ordinance that are not consistent with the Act, Chapter 90.58, and supporting WAC Chapters shall not apply in shoreline jurisdiction; and
- The provisions of the City of Spokane Critical Areas Ordinance do not extend beyond the limits specified in this SMP. For regulations addressing critical area buffer areas that are outside Shoreline Jurisdiction, see the City of Spokane Critical Areas Ordinance.

The provisions of the City of Spokane Critical Areas Ordinance, Title 17E, shall apply to any use, modification or development within the shoreline jurisdiction whether or not a shoreline permit or letter of exemption is required. Unless otherwise stated, no development shall be constructed, located, extended, modified, converted, or altered, or land divided without full compliance with the Critical Areas Ordinance and the entire SMP. For development within critical areas within shoreline jurisdiction, the following shall apply:

- Any use, modification, or development within critical areas shall result in a no net loss of ecological functions;
- Project proposals shall adhere to the applicable submittal requirements as specified in the Critical Areas Ordinance and the Shoreline Regulations;
- Any use, modification, or development shall include the requirements for mitigation sequencing as specified in SMC 17E.060.220 of these Shoreline Regulations;
- Where mitigation is required, a mitigation plan shall be submitted pursuant to the submittal requirements described within Critical Areas Ordinance; and
- Any use, modification, or development within two or more critical area types shall be required to adhere to the standards that are the most protective of the ecological function of the subject shoreline or critical area.

3.0 REGULATORY FRAMEWORK

The following SMP elements formed the framework for establishing SMP policies, goals, and regulations that will result in no net loss of shoreline ecological function.

3.1 Environmental Designations

Environmental designations were based on the biological and physical characteristics of the shorelines identified during the shoreline inventory; from existing land uses identified in the Comprehensive Plan; and from community goals expressed through the SMP update public process. Goals, policies and regulations were developed for each environmental designation.

The City has complied with RCW 90.58.100, SMA Shoreline Directives item (B), in identifying environmental designations within the shoreline jurisdiction and management policies for each one. In addition to the designation requirements found in WAC 173-26-211, the City has developed three additional designations to further protect the Spokane River shoreline ecology: 1.) limited urban; 2.) wastewater treatment plant environment; and 3.) intensive urban development.

For the SMP update, the City developed the following environmental designations, each with their own separate policies and regulations:

- Natural Environment (NE)
- Urban Conservancy Environment (UCE)
- Shoreline Residential Environment (SRE)
- Limited Urban Environment (LUE)
- Intensive Urban Environment (IUE)
- Wastewater Treatment Plant Environment (WTPE)

The environmental designations are listed in order of protecting the integrity of the existing natural environment. For example, within the Natural Environment designation, only a limited number of potentially site disturbing activities are allowed. The Intensive Urban Environment is located in the City downtown core, which already exhibits many urban impacts and more urban uses and activities are allowed within that designation. Appendix C includes the Shoreline Designation Maps.

The updated environmental designations were developed with information gathered during the shoreline inventory. This updated information resulted in environmental designations that more accurately reflect the nature of the shoreline environments. The updated and comprehensive evaluation of shoreline conditions was used to develop the goals, policies and regulations for the SMP update. While not directly resulting in no net loss to the shoreline ecosystem, the updated inventory and analysis plan has resulted in more protective policies and regulations than currently exist.

3.2 Shoreline Jurisdiction/Buffers and Structure Setbacks

The shoreline inventory produced a more accurate delineation of the OHWM and the shoreline jurisdiction than is currently delineated. In addition, the channel migration zone along Latah Creek has been mapped by the Spokane County Conservation District. This new information has resulted in a better understanding of the area where shoreline impacts should be regulated. The OHWM, aerial photography, and the environmental designations were used to develop buffers and setbacks that are protective of the shoreline environment. The updated OHWM, delineation of the shoreline jurisdiction, and the increased buffers and setbacks provide added protection to the shoreline ecological functions from potential development. Appendix C also includes maps that show the shoreline buffers.

The following data was used when mapping the buffers from the OHWM: information gathered during the shoreline inventory phase, existing natural environment GIS layers, historic and current aerial photography, existing land use, and other research on stream buffer zones. The existing shoreline condition and the potential for shoreline restoration were considered for buffer distance after reviewing the shoreline inventory and GIS natural environment layers. Existing development regulations and land

use densities were reviewed; and the existing Critical Areas Ordinance and critical areas buffers provided further guidance in setting shoreline buffer distances.

Consistent with the Shoreline Management Act, the primary objectives for setting shoreline buffers include:

- Ensure no further degradation of the shoreline environment.
- Set buffer distances to achieve no net loss of ecological function within the shoreline jurisdiction.
- Set buffer distances to increase potential for future shoreline restoration.

The Critical Areas layers and buffers provided a basis for the shoreline buffer determination. Critical Areas inventories and buffers include:

- Fish and Wildlife habitat layers.
- Floodplains.
- Wetlands and associated buffers.
- Upland slopes - steep slopes: Greater than 16 percent - generally all included within shoreline buffer.
- Highly erodible soils combined with steep slopes.
- Channel Migration Zone – helps ensure that future bank stabilization or armoring is not required.
- Geologically Hazardous Areas combined with steep slopes.

Summary of the results of the shoreline protection and restoration buffer:

- Areas with the Natural Environment shoreline designation were given a 200-foot buffer.
- The Intensive Urban shoreline designation was given a 50-foot buffer plus 25-foot structure setback (does not include sidewalks and landscaping.)
- A 50-foot buffer and 15-foot structure setback was established for the Wastewater Treatment Plant based on existing disturbances.
- The center-line of existing improved right-of-ways that generally ran parallel to the river corridor was used as a buffer boundary.
- Generally, critical slopes within the 200-foot shoreline jurisdiction were included within the buffer area.

3.3 Shoreline Permit Application Requirements (17E.060-070)

Development within the shoreline is subject to a permit and review process. The following application procedures are generally required for all development, except those specifically exempted from the permit process. For most shoreline development the following information is required:

- Wetland delineation
- Inventory of existing vegetation (SMC 17E.060.240)
- Landscape Plan
- Mitigation plan (where applicable)

- Depiction of view impact from existing residential uses, (where applicable)

Shoreline Substantial Development Permit: ensures that substantial development within the shoreline area is accomplished in a manner that protects the shoreline ecology consistent with the Comprehensive Plan and SMA. Criteria have been established for determining the process and conditions under which a shoreline substantial development is needed.

Shoreline Conditional Use Permit: allows flexibility in administering the use and modification regulations.

Shoreline Variance Permit – purpose is to grant relief to specific bulk or dimensional requirements.

Shoreline Design Review – The shoreline design review process is required for all shoreline development by a public agency, shoreline development on public property, and shoreline development requiring a shoreline conditional use permit.

- Shoreline substantial development permit letter of exemption. If exempt from substantial development permit, compliance with the SMP requirements is still required as is a letter of exemption from the City

General Requirements for Shoreline Use:

All shoreline use and development shall be located, designed, constructed and managed to achieve no net loss of shoreline ecological functions.

All shoreline use and development shall be subject to mitigation sequencing.

All shoreline use and development shall be subject to the Shoreline District Standards.

3.4 Mitigation Sequencing (17E.060-220)

To achieve no net loss of shoreline ecological functions, all and any proposed use, modification, or development within the shoreline jurisdiction shall analyze the impacts of the proposal on the shoreline ecological functions and include measures to mitigate environmental impacts not otherwise avoided or mitigated by compliance with the shoreline regulations or other applicable regulations, including the Washington State Environmental Policy Act (SEPA). Mitigation sequencing shall occur in the following prioritized order:

1. Avoiding the impact altogether by not taking a certain action or parts of an action;
2. Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts;
3. Rectifying the impact by repairing, rehabilitating or restoring the affected environment;
4. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action;
5. Compensating for the impact by restoring, rehabilitating, or enhancing substitute shoreline environments; or
6. Monitoring the impact and the compensation project and taking appropriate corrective measures.

As a condition of any permit or approval allowing alteration of shoreline ecological functions, the applicant shall engage in the restoration, rehabilitation, or enhancement of the shoreline environment in order to offset the impacts resulting from the applicant's actions.

3.5 Vegetation Conservation and Replacement (17E.060-230)

Vegetation conservation and replacement aims to achieve a no net loss of shoreline ecological functions by protecting and restoring the ecological functions and ecosystem-wide processes performed by vegetation along shorelines. Vegetation conservation also increases the stability of riverbanks, reduces the need for shoreline stabilization measures, improves the visual and aesthetic qualities of the shoreline, protects plant and animal species and their habitats, and enhances shoreline uses. To achieve this, the following measures are contained in the SMP:

- There shall be no net loss of vegetative cover within the shoreline jurisdiction.
- Removal of or alteration to any vegetation within the shoreline jurisdiction shall not be allowed unless such activity is approved by the [Planning] Director as part of a vegetation replacement plan.
- Proposed removal of vegetation for a permitted use shall be reviewed pursuant to the mitigation sequencing specified in SMC 17E.060.220. Avoidance of any impact to shoreline vegetative cover is the preferred method of mitigation.
- Vegetation conservation provisions also apply to those shoreline uses, modifications, and developments that are exempt from the requirement to obtain a shoreline substantial development permit.
- Normal maintenance or repair of existing utilities and facilities within an existing degraded shoreline area shall be allowed if the activity does not further alter or degrade shoreline ecological functions or vegetative cover, and there is no increased risk to life or property as a result of the proposed operation, maintenance or repair.
- Vegetation management shall be in accordance with best management practices that are part of ongoing maintenance of structures, infrastructure, or utilities. These ongoing activities shall not be subject to new or additional mitigation when they do not expand further into the critical area, are not the result of an expansion of the structure or utility, do not directly impact endangered species, or result in no net loss of shoreline ecological functions. Whenever possible, maintenance activities shall be confined to late summer and fall.

The goal of vegetation conservation is to conserve existing vegetation on-site. Although avoidance of removing existing vegetation is preferred, removal of vegetation for a permitted use must be reviewed pursuant to the mitigation sequencing specified in SMC 17E.060.220, and approved by the director. If removal occurs, a vegetative replacement plan for each project must be prepared by a professional biologist/arborist and replacement should be of a native species. Otherwise, funds must be donated to the Shoreline Restoration Fund.

3.6 Unanticipated Impacts and Mitigation Measures

The State places responsibility for protection of the shorelines within the City limits to the City of Spokane. Policies and regulations contained in the SMP provide the means to protect the shoreline environment for both foreseeable and for unanticipated impacts. In general, the environmental designations, setbacks, and mitigation standards stated in the regulations provide the framework for the City to evaluate shoreline development and use proposals as they arise. For unanticipated and unique impacts, the following shoreline elements provide a means of complying with the no net loss provisions of the SMP. Included in this framework are:

Environmental designations that provide a reasonable description of the shoreline for permitting purposes.

Shoreline buffers and setbacks that reflect the existing shoreline environment.

The Conditional Use Permit provides a public review process for input on a proposed development or use.

The City and Ecology must review and approve conditional uses and all variances.

Civil penalty for unauthorized activities.

The SMP also augments several state and federal regulations that already provide a degree of protection to various elements of the shoreline system, including:

- Establishing an accurate OHWM from which to develop accurate protective setbacks;
- Creating policies that require on-site restoration where possible; and,
- Establishing guidelines for a mitigation fund to compensate for unavoidable impacts.

In addition to the City's planning and regulatory provisions, the SMP provides strict policies for no net loss, and the CAO provides protection for riparian habitat. The CAO provides a mechanism for development of a mitigation plan if the shoreline environment is affected. The Restoration Plan as a mechanism to restore damaged portions of the shoreline to enhance function.

The Shoreline Restoration Plan, a new element of the SMP, identifies seven programmatic opportunities to be incorporated into existing or proposed programs with the goal of restoring ecological functions to non-site specific shorelines; these include public education, shoreline regulations and enforcement, shoreline maintenance, conservation futures, stormwater plan, sewage treatment, and water stewardship. The Shoreline Restoration Plan identifies 39 small-to-large restoration site-specific opportunities to improve or restore shoreline ecological functions that have been impaired as a result of past development and use, which have been prioritized and will begin in 2014 as a result of this Shoreline Master Program update process.

3.7 Monitoring

Monitoring includes monitoring the successful implementation of the SMP Restoration Plan as outlined in Chapter 7 of the Shoreline Restoration Plan, as well as a process for monitoring site-specific restoration projects.

Monitoring the affects of development under the new SMP regulations is an important means of achieving no net loss. The US Army Corps of Engineers Ecosystem Management and Restoration Program provides the general process for implementing riparian restoration and monitoring including: 1.) setting goals and objectives, 2.) developing a monitoring protocol, 3.) designing and implementing data collection, 4.) analyzing and interpreting monitoring data, and 5.) assessing restoration efforts. (Guilfoyle and Fischer 2006).

The inventory tables in the Inventory and Analysis Plan (shown as Table 1-1 and 1-2 in this document) can be used to quantify how the policies and regulations are working. It is anticipated that revisions to portions of the inventory will occur during SMP updates. (Next update is in 2020.)

4.0 SUMMARY

The City of Spokane's Shoreline Master Program goals, policies, and regulations provide a means to accommodate appropriate reasonable development and activities within the shoreline jurisdiction and provide protection to the shoreline ecology. By balancing new development with conservation, restoration, and mitigation of ecological shoreline functions, the SMP ensures that new development does not cumulatively affect shoreline ecology so as to achieve the goal of no net loss of shorelines.

Impacts to the shoreline environment are anticipated to occur from future development, infrastructure and utility improvements, and public recreational activities. Impacts include those from permitted uses, unregulated uses, conditional uses, and development exempt from shoreline permitting from the following potential uses:

- Vacant land that has the potential to be developed has been identified in the shoreline jurisdiction. It is reasonable to assume that much of this land will be developed at some point in time. In addition, re-development of properties along the shorelines is also anticipated.
- Transportation, utility and other community infrastructure projects are anticipated within the shoreline jurisdiction.
- Public use of the shoreline is anticipated to increase, bringing pressure for additional recreational facilities and public access. These activities would occur on both public and private lands. Facilities will be required to provide access.

Potential shoreline impacts common to development and other anticipated uses include:

- Site disturbance of plant communities allowing for influx of invasive species
- Mature tree removal
- Removal of vegetation that causes damage to wildlife habitat, shoreline ecological functions, flood control and continuity of the river environment.
- Increased erosion
- Increased impervious surfaces
- Reduced public access (including visual and physical access)
- Docks that affect navigation.

As part of the Cumulative Impacts Analysis, the following vacant, privately-owned properties with potential for new development are used as examples to illustrate how the proposed shoreline regulations provide protection of the City shorelines. Table 4-1 summarizes this information.

Table 4-1 Potential Impacts to Properties with Development Potential

	Felts Field	Spokane CC	"U" District/ Browns	Greenwood Cemetery	Sisters of the Holy Name	Spokane Falls CC	Riverside State Park	Latah Creek-Hatch Road	Latah Creek-Agriculture
Regulatory Structure									
Zoning Designation (1)	LI	LI	HI/CG	RSF	RHD	RHD	RSF	RSF	RA
Environmental Designation (2)	UCE	LUE	LUE	UCE	NE	UCE	NE	NE	UCE
Shoreline Buffer (ft)	150	75	75	200	200	200	200	200	200
Construction Setback (ft)	15	15	15	0	0	0	0	0	0
Total Protected Shoreline (ft)	165	90	90	200	200	200	200	200	200
Potential Impacts									
Site Disturbance (3)	MS/VC	MS/VC	MS/VC	None allowed	None allowed	None allowed	None allowed	None allowed	None allowed
Mature Tree Removal	MS/VC	MS/VC	MS/VC	None allowed	None allowed	None allowed	None allowed	None allowed	None allowed
Vegetation Removal	MS/VC	MS/VC	MS/VC	None allowed	None allowed	None allowed	None allowed	None allowed	None allowed
Increased Erosion	Construction Practices/MS			No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Increased Imp. Cover (4)	Allowed	Allowed	Allowed	None allowed	None allowed	None allowed	None allowed	None allowed	None allowed
Reduced Public Access	Note: Increased physical and visual access is a key element of the SMP (17E.060.280)								
Docks	Allowed	None allowed	Allowed	None allowed	None allowed	None allowed	None allowed	None allowed	None allowed

Notes: 1. Zoning Designations

Residential Agricultural RA
 Residential Single Family RSF
 Residential High Density RHD
 General Commercial CG
 Light Industry LI
 Heavy Industry HI

3. Mitigation Sequencing (17E.060.220)

Vegetation Conservation (17E.060.230) MS
 VC

2. Environmental Designations

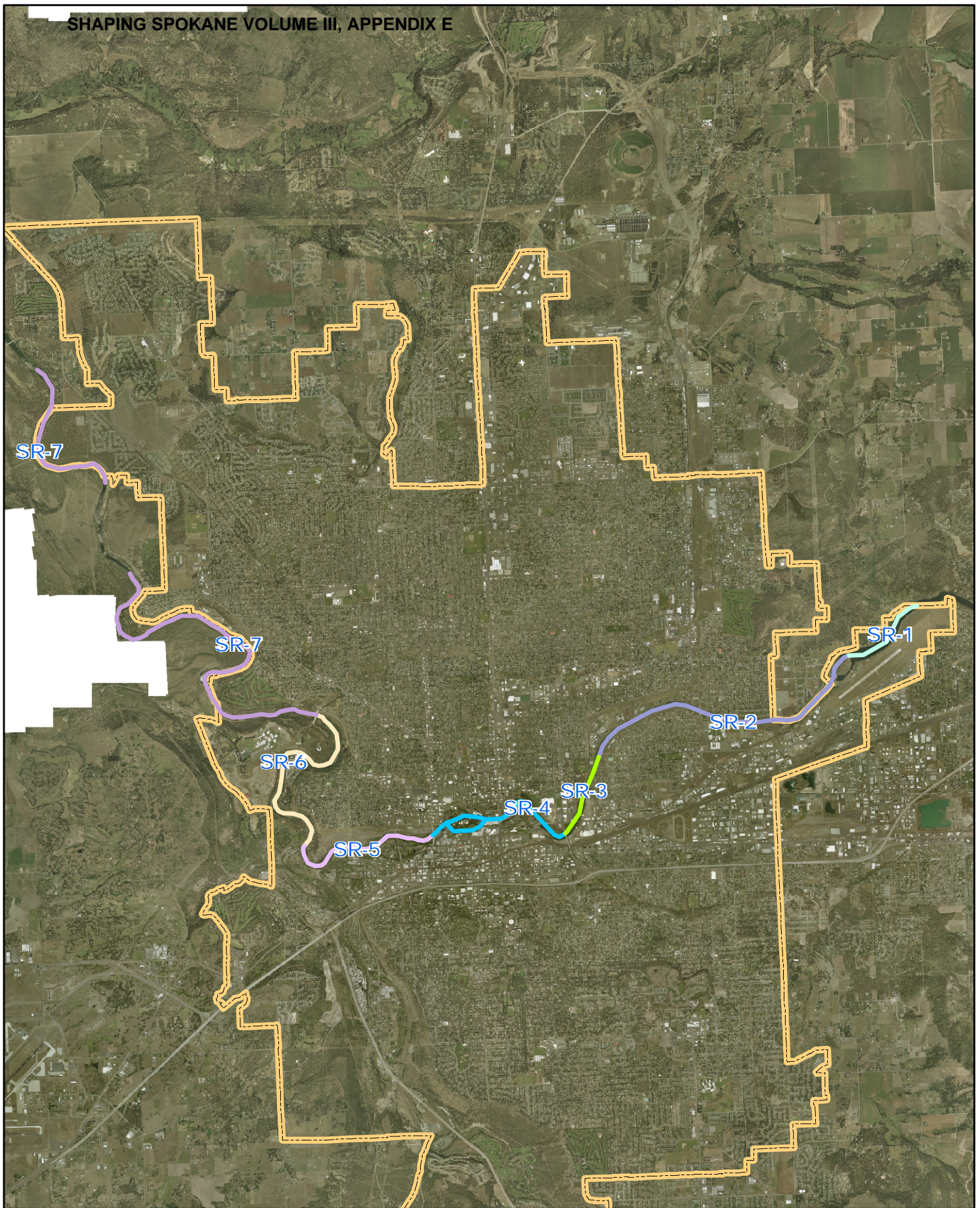
Natural NE
 Urban Conservancy UCE
 Shoreline Residential SRE
 Limited Urban LUE
 Intensive Urban IUE
 Wastewater Treatment WTPE

4. Parking facilities for associated structures are allowed with limits. See 17E.060.590.


The goals, policies and regulations contained in the City SMP provide protection and mitigation for these potential impacts. The environmental designations and associated buffers and setbacks provide substantial shoreline protection limiting development activities within the shoreline jurisdiction. If the regulations are enforced, the goal of no net loss to shoreline ecological functions should be met. In summary, the Shoreline Master Program goals, policies, and regulations make good use of the generic guidelines for protection of the environment – *Avoid, Minimize, Mitigate*.

The City is mandated by the State to update the Shoreline Master Program every seven years to maintain and improve the existing shoreline environment. The next update will be required in 2020.

APPENDIX A
SPOKANE RIVER AND LATAH CREEK REACH



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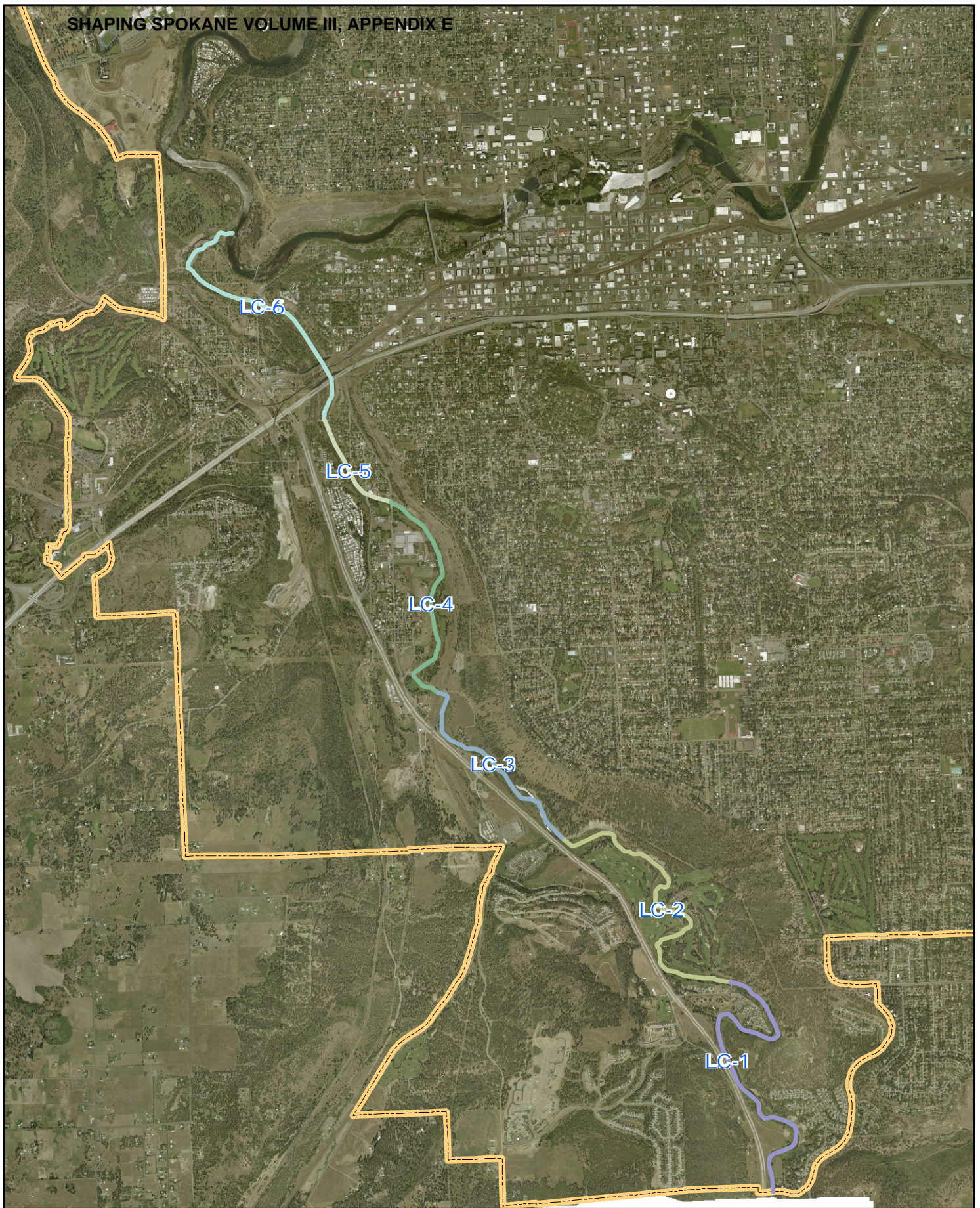
 City Boundary



0 0.5 1 2
Miles

Figure 4-1. Spokane River Reaches

City of Spokane
Shoreline Master Plan
March 2007



Legend

 City Boundary

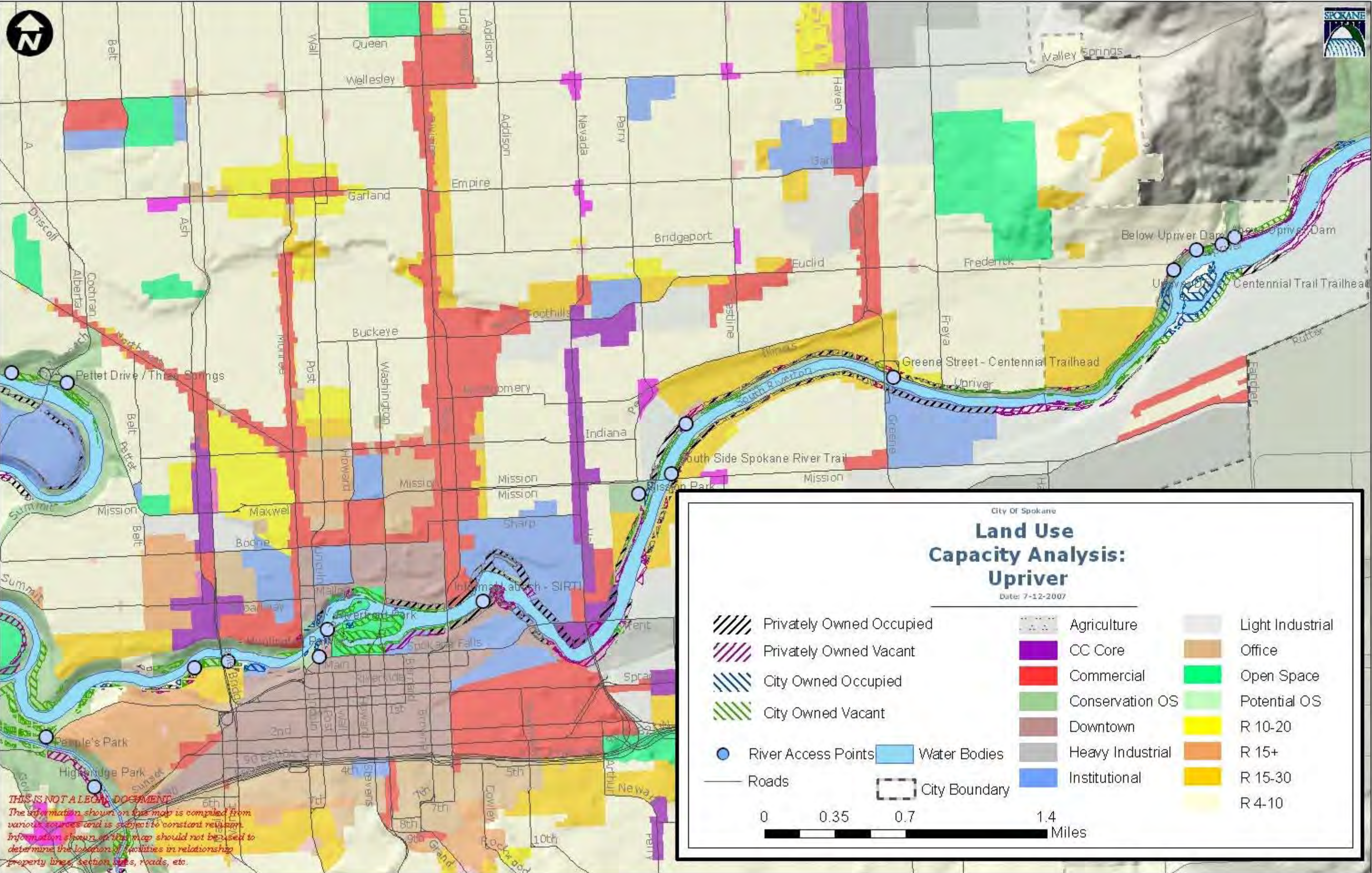


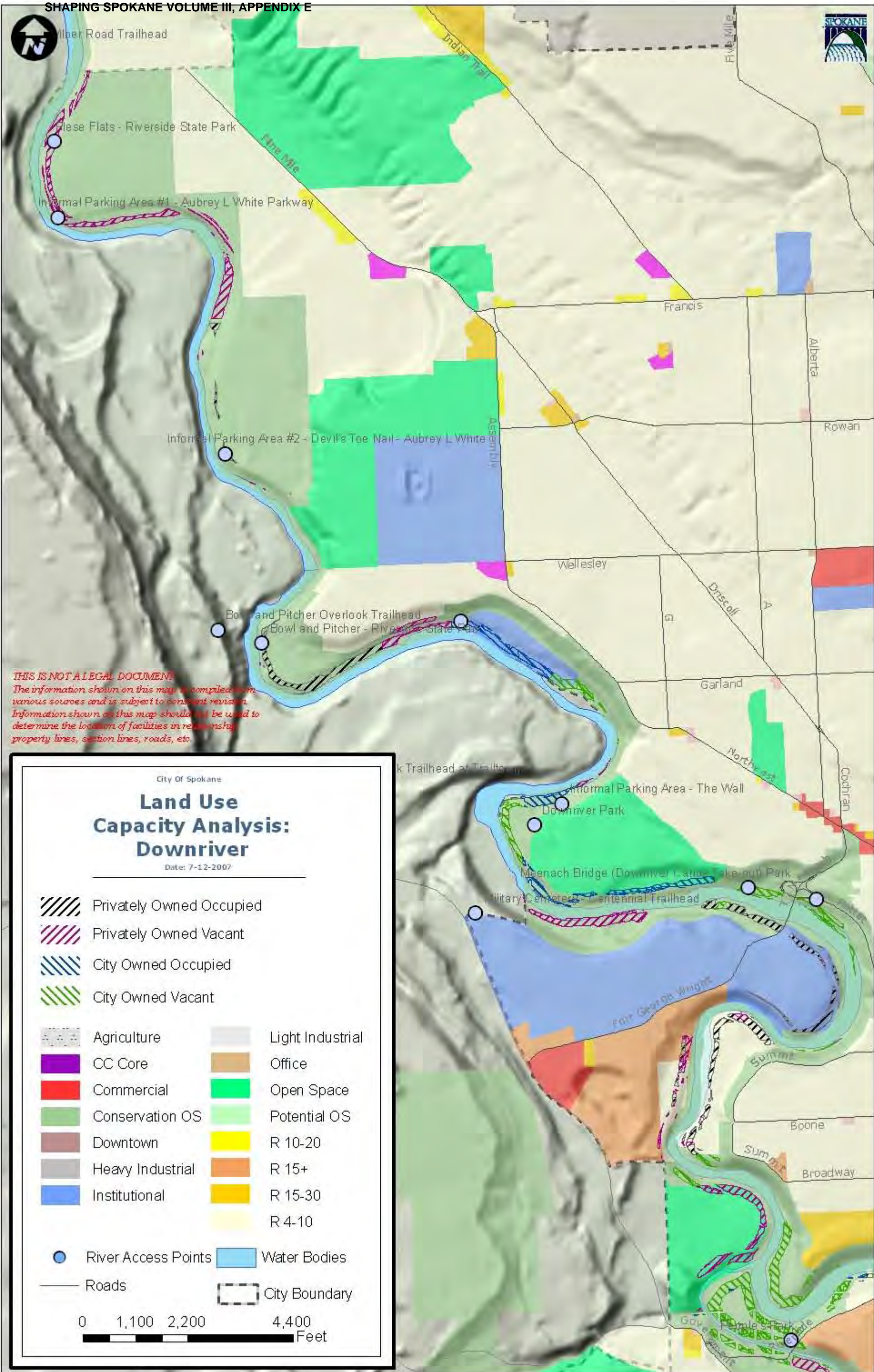
0 0.25 0.5 1
Miles

Figure 5-1. Latah Creek Reaches

City of Spokane
Shoreline Master Plan
March 2007

APPENDIX B
LAND USE CAPACITY MAPS



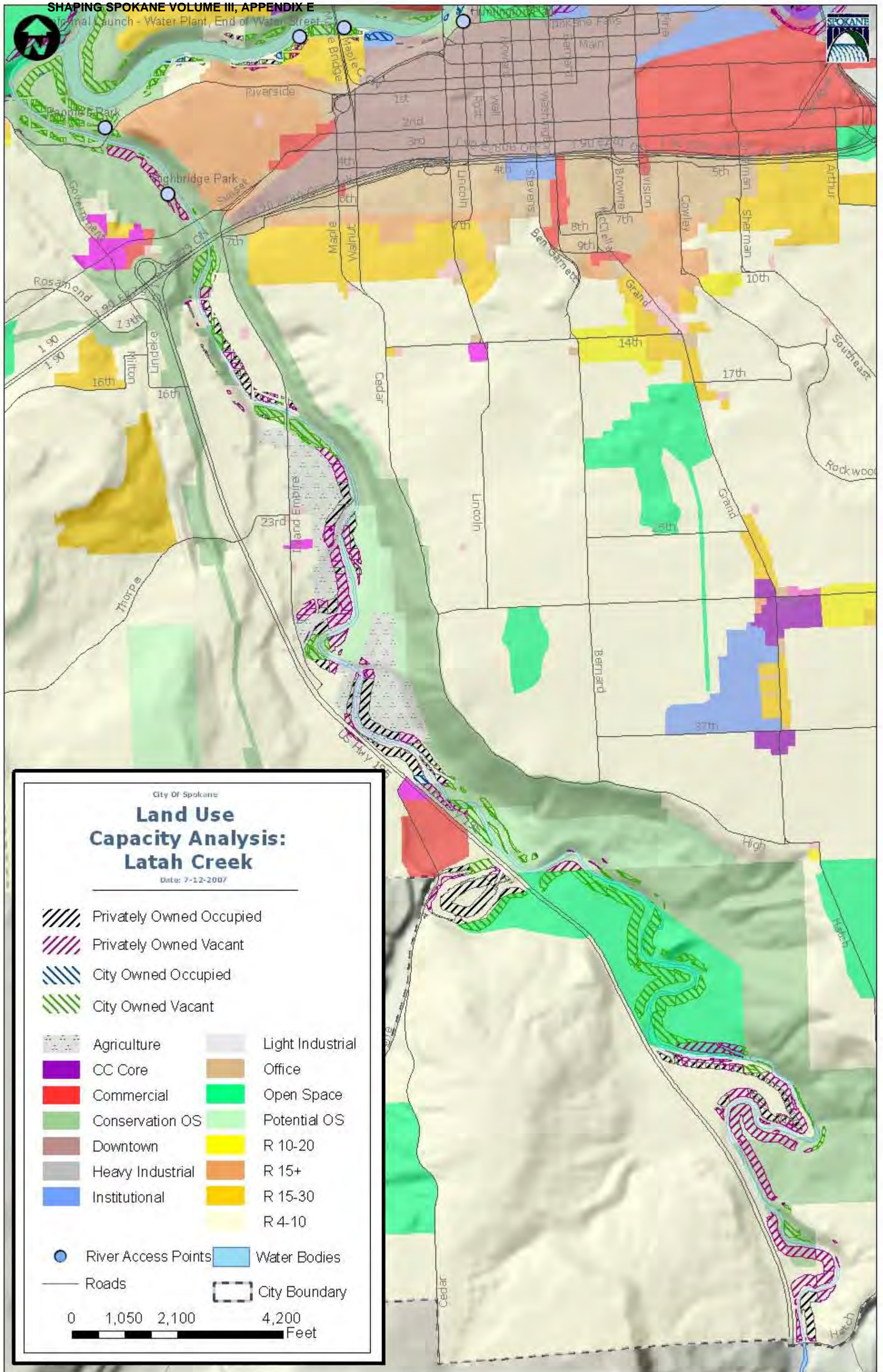


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City Of Spokane
**Land Use
Capacity Analysis:
Downriver**

Date: 7-12-2007

- | | |
|--|--------------------------|
| | Privately Owned Occupied |
| | Privately Owned Vacant |
| | City Owned Occupied |
| | City Owned Vacant |
| | Agriculture |
| | CC Core |
| | Commercial |
| | Conservation OS |
| | Downtown |
| | Heavy Industrial |
| | Institutional |
| | Light Industrial |
| | Office |
| | Open Space |
| | Potential OS |
| | R 10-20 |
| | R 15+ |
| | R 15-30 |
| | R 4-10 |
| | River Access Points |
| | Water Bodies |
| | Roads |
| | City Boundary |
- 0 1,100 2,200 4,400 Feet



APPENDIX C
SHORELINE ENVIRONMENTAL DESIGNATIONS AND BUFFER MAPS

Shoreline Environment Designations Downriver

Legend

- Shoreline Designation**
- Limited Urban Environment
 - Natural Environment
 - Shoreline Residential Environment
 - Urban Conservancy Environment
 - Urban Intensive Environment
 - Wastewater Treatment Environment
 - Natural Environment - Unsurveyed
 - Urban Conservancy Environment - Unsurveyed
 - City of Spokane
 - Parcels
 - Ordinary High Water Mark

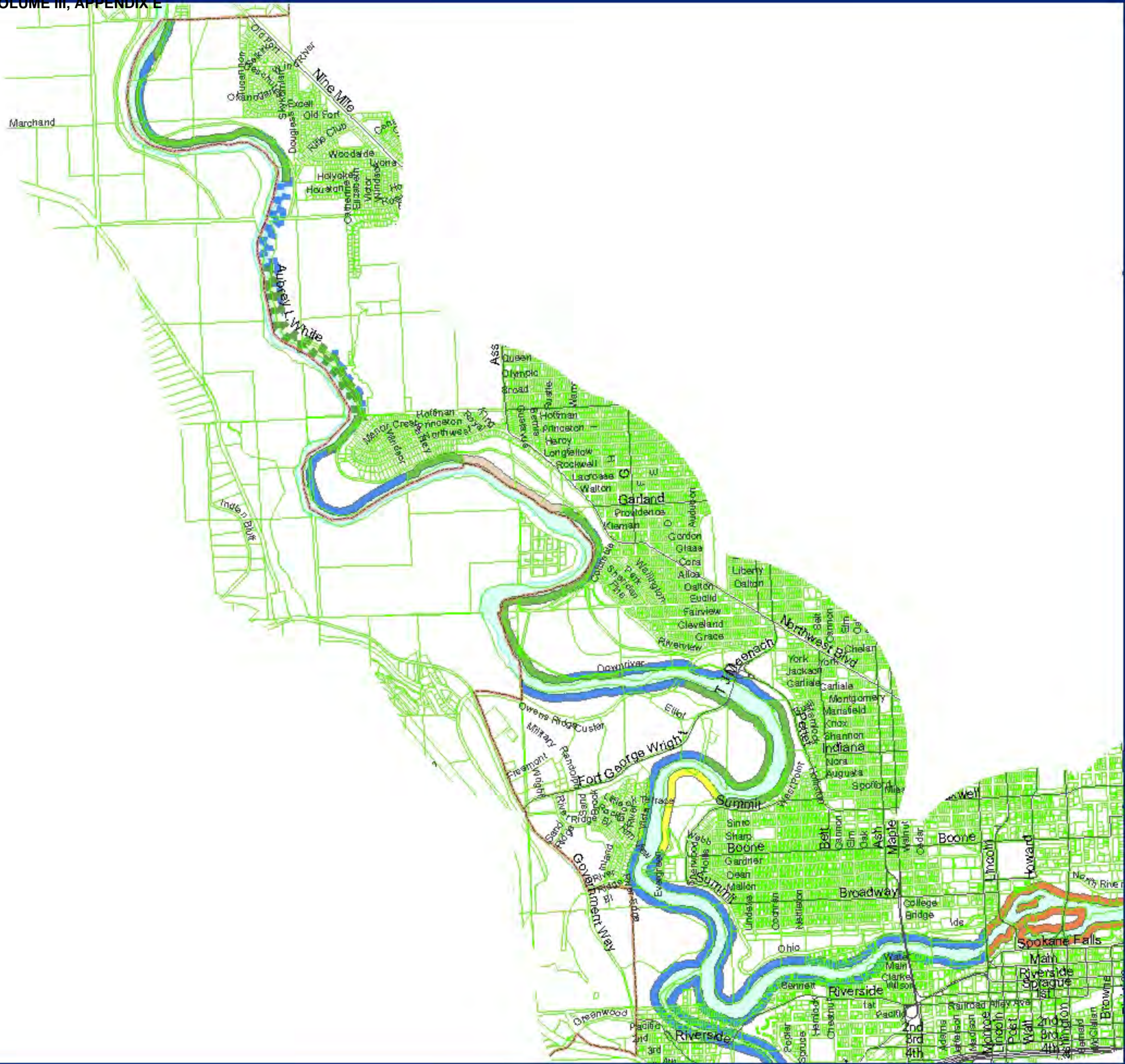
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Source: GIS
Date: 10/2008



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Shoreline Environment Designations Latah

Legend

Shoreline Designation

-  Limited Urban Environment
-  Natural Environment
-  Shoreline Residential Environment
-  Urban Conservancy Environment
-  Urban Intensive Environment
-  Wastewater Treatment Environment
-  Natural Environment - Unsurveyed
-  Urban Conservancy Environment - Unsurveyed
-  City of Spokane
-  Parcels
-  Ordinary High Water Mark

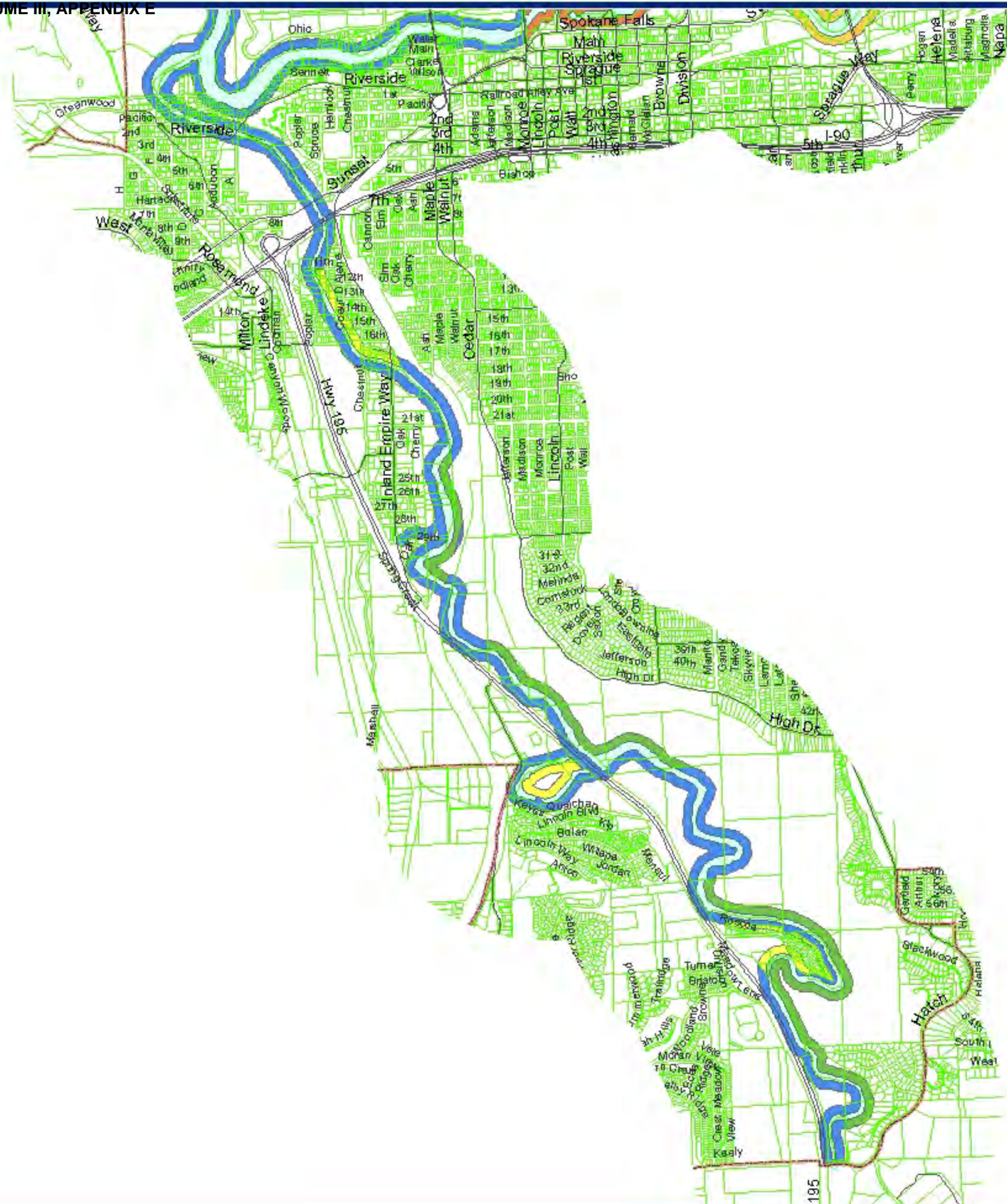
0 0.25 0.5 1 Miles

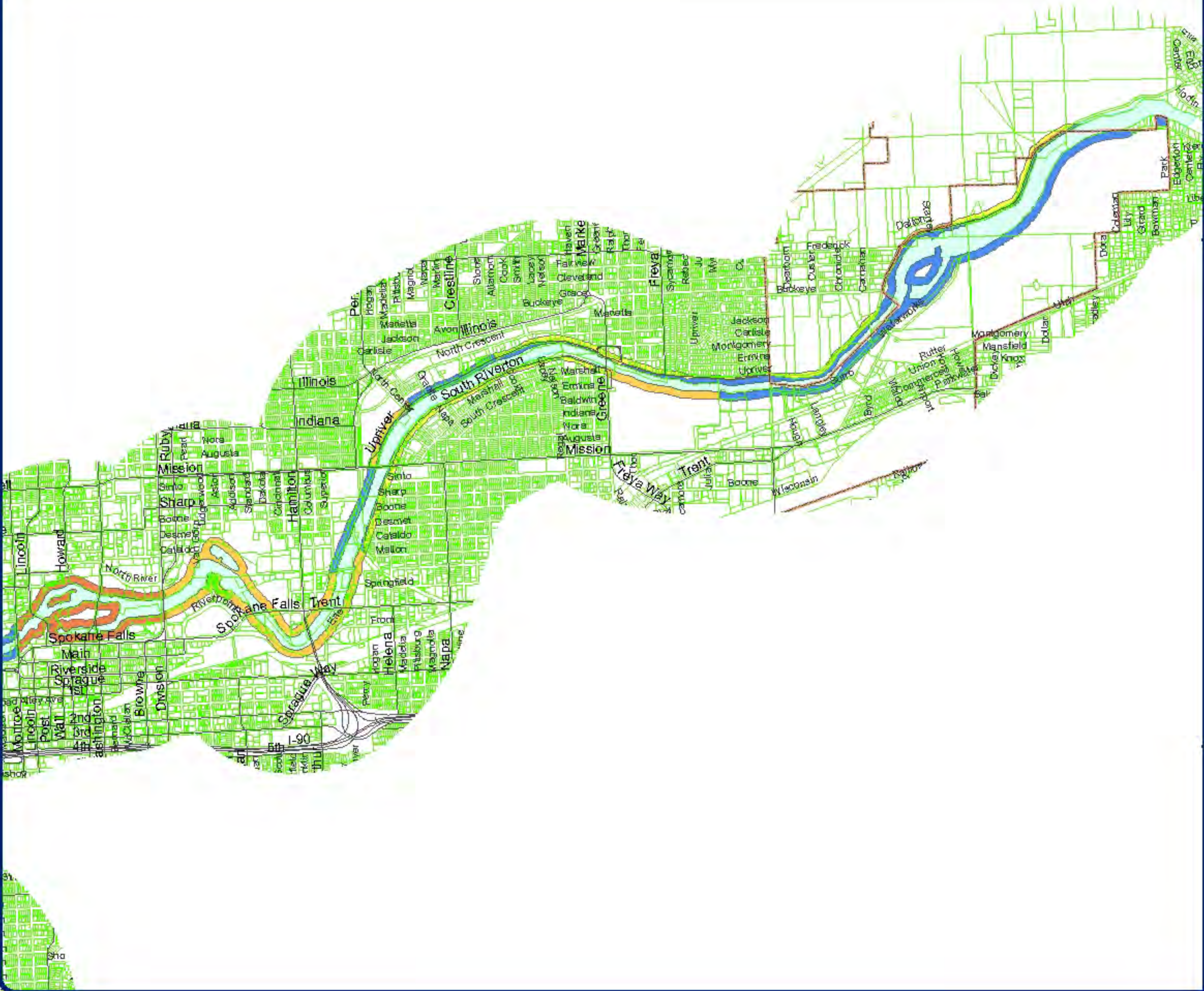
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Date: 10/2008



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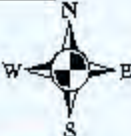
Shoreline Environment Designations Upriver

Legend

- Shoreline Designation**
- Limited Urban Environment
 - Natural Environment
 - Shoreline Residential Environment
 - Urban Conservancy Environment
 - Urban Intensive Environment
 - Wastewater Treatment Environment
 - Natural Environment - Unsurveyed
 - Urban Conservancy Environment - Unsurveyed
 - Parcels
 - Ordinary High Water Mark

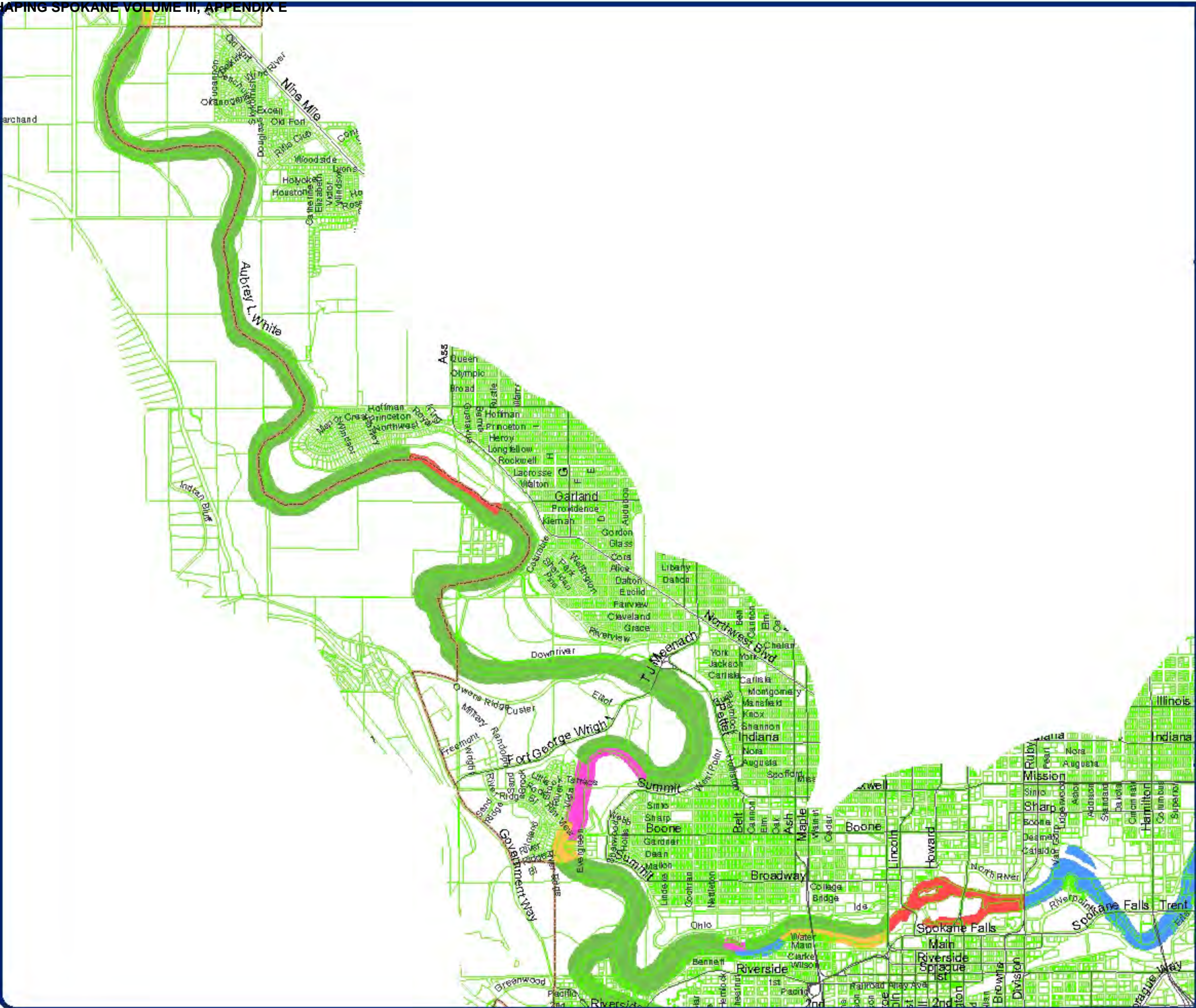
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Source: GIS
Date: 10/2008



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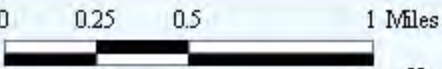


Shoreline Buffers Downriver

Legend

Shoreline Buffers

- 50 feet
- 60
- 75
- 100
- 150
- 200
- City of Spokane
- Parcels

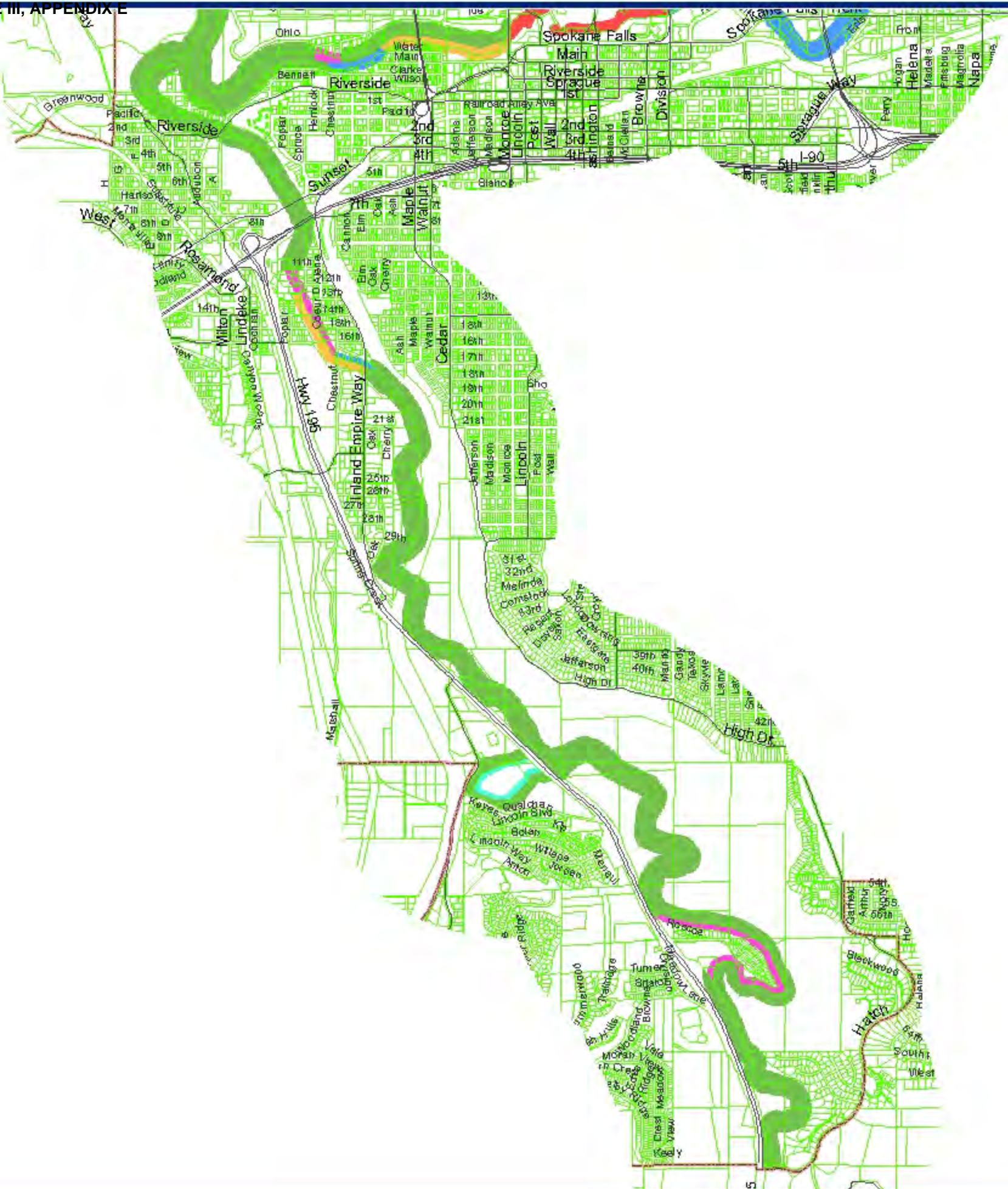


Source: GIS
Date: 10/2008



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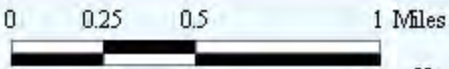


Shoreline Buffers Latah

Legend

Shoreline Buffers

- 50 feet
- 60
- 75
- 100
- 150
- 200
- City of Spokane
- Parcels



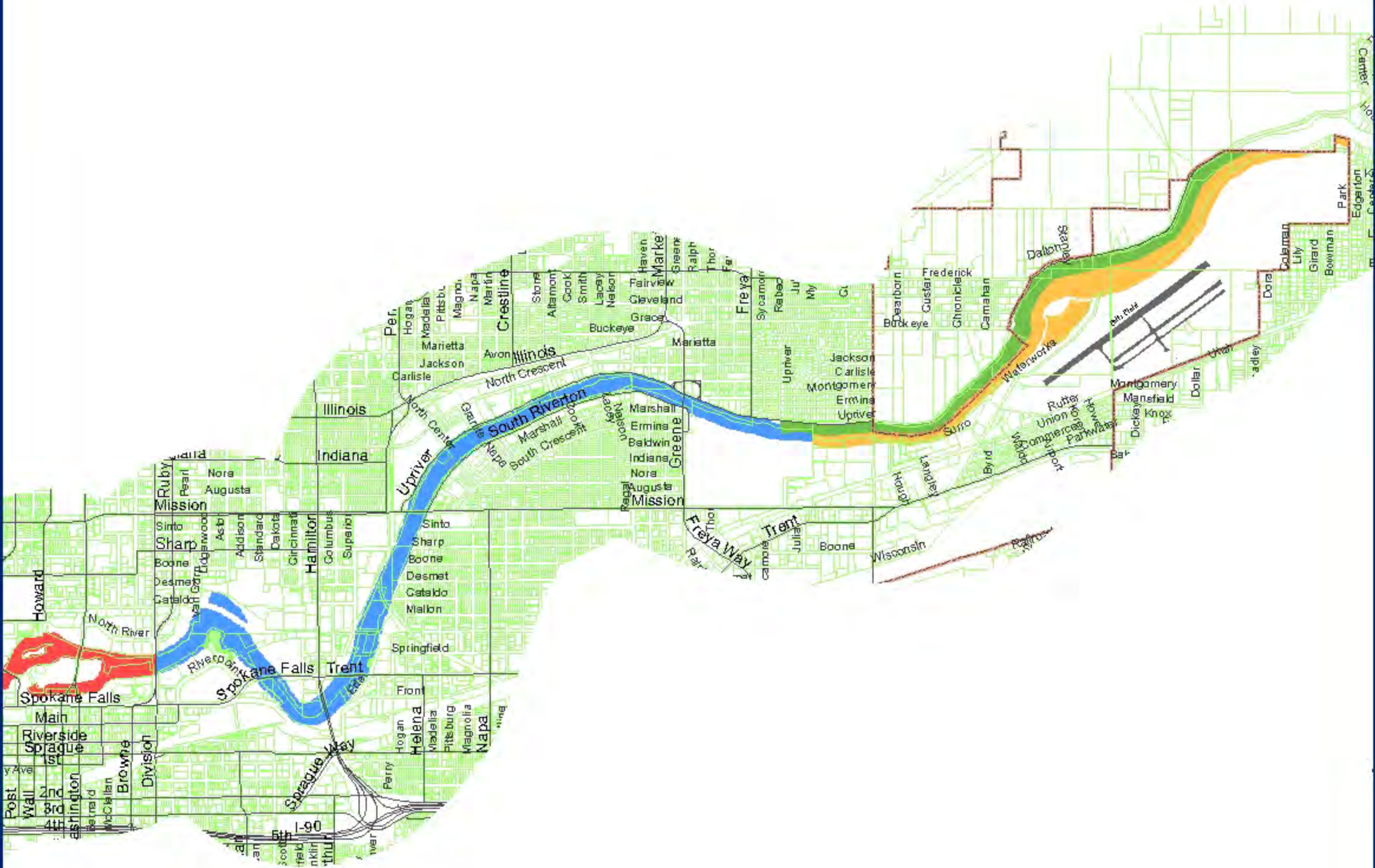
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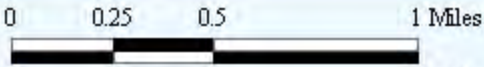
Shoreline Buffers Upriver



Legend

Shoreline Buffers

- 50 feet
- 60
- 75
- 100
- 150
- 200
- City of Spokane
- Parcels



Source: GIS
Date: 10/2008



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DRAFT SHORELINE BUFFER MAPPING METHODOLOGY

After consulting with Ecology and URS staff, the following mapping system was established to guide the mapping of the shoreline environmental buffers.

General Mapping Procedures, Criteria, and References:

When mapping the shoreline buffer distance from the ordinary high-water mark (OHWM), the information gathered during the shoreline inventory phase, existing shoreline natural features and other GIS layers, historic and current aerial photography, and researched literature on stream buffer zones were relied upon.

The Shoreline Buffer layer was created by going block by block at a scale of 1:2400 to determine the shoreline buffer distances from the OHWM. The quality of the existing shoreline condition and the potential for shoreline restoration were considered after reviewing the guiding shoreline inventory and GIS layers.

The existing development regulations and densities allowed were reviewed. The existing Critical Areas Regulations and critical areas buffers provided further guidance in setting buffer distances.

Consistent with the Shoreline Management Act (RCW 90.58), the primary objectives of setting the shoreline buffers included:

- Ensure no further degradation of the shoreline.
- Set buffer distances to achieve a "no net loss" of shoreline ecological functions.
- Set buffer distances, where possible, to increase the potential for future shoreline restoration.
- Critical Areas Regulations layers and buffers provided a strong basis for the shoreline buffer determination.

General summary of the results of the shoreline protection and restoration buffer:

- Generalized buffer distance increments of 50, 60, 75, 100, 150, and 200 feet were set. These distances fit existing shoreline constraints such as existing development patterns.
- Generally, areas with the shoreline Natural Environment designation were given a 200-foot buffer.
- The Intensive Urban shoreline environment designation was generally given a 50-foot buffer.
- A buffer of 50 feet was applied to the Wastewater Treatment Environment based upon current disturbances and planned new facilities.

Shoreline Buffer General Mapping Criteria:

Typically the smallest linear increment of a shoreline buffer category deemed to ensure protection was a single block length or 300 feet. The smallest linear buffer length ended up being roughly 580 feet in the Lower Crossing area.

Larger single parcels with greater than 300 feet of river frontage and greater than 2 acres of developable land that have the potential for on-site development intensity transfer and the greatest opportunity for shoreline jurisdiction restoration, received a single consistent buffer because of the restoration potential during redevelopment.

The shoreline buffer designation for a linear stretch was compared with the buffer designation on the opposite side of the river and the designations adjacent to the site. A lower priority objective was to ensure that there was some consistency with adjacent stretches when the conditions were generally the same.

The middle of existing improved right of ways that generally ran parallel to the river corridor were used as a separation line for buffers as drawn on the maps. This is consistent with the proposed regulations.

Generally, all critical steep slopes within the 200 foot shoreline jurisdiction were included within the buffer area.

GIS Layers most relied upon during shoreline buffer mapping:

- Existing Land Use and Development Patterns:
 - Platting pattern and lot size
 - Existing land uses
 - Amount of current and historic site disturbance
 - Road Network – Roads running parallel to river corridor
 - Utility corridors – electric, water, sewer, stormwater
- 2006 and 2007 Orthophotos for existing ground and vegetation conditions
- Historic Orthophotos for vegetation and land use reference – Primarily 1958.
- Critical Areas Inventories and Buffers:
 - Fish and Wildlife Habitat layers
 - Floodplains
 - Wetlands and buffers
 - Upland Slopes - Steep Slopes: greater than 16 percent (generally all included within shoreline buffer)
 - Highly Erodible Soils combined with steep slopes
 - Channel Migration Zone - this will help ensure that future bank stabilization or armoring is not needed.
 - Geologically Hazardous Areas combined with steep slopes
 - Streams and other seasonal water bodies

Shoreline GIS Inventory Layers:

- Environmental Designation from the Shoreline Inventory
- Upland slopes
- Shoreline Vegetation Inventory and Class layers
- Ordinary High-Water Mark and 200-foot Shoreline Jurisdiction
- Shoreline Restoration Opportunity layer
- Bank Armoring layer
- Wastewater Outfall locations
- Other Shoreline Features layer



City Plan Commission Recommendation, Findings and Conclusions on a Proposal to Adopt the City of Spokane Shoreline Master Program

October 8, 2008

RECOMMENDATION: The City of Spokane Plan Commission recommends moving the proposed City of Spokane Shoreline Master Program to City Council and opts to defer to the Council two height alternatives in the SMP Downtown and Campus Districts.

The Plan Commission recommendation is made after full opportunity for public review. Over the nearly three-year SMP update process, the Plan Commission and planning staff have held 26 Plan Commission workshops and one public hearing and deliberations on the SMP.

In making this recommendation, the Plan Commission makes the following findings and conclusions:

FINDINGS:

1. The Washington State Legislature passed the Washington State Shoreline Management Act (RCW 90.58 [SMA]) in June, 1971. Under the SMA, each county and city with "shores of the state" is required to adopt and administer a local shoreline master program to carry out the provisions of the Act.

2. The Shoreline Master Program Approval/Amendment Procedures and Guidelines (WAC 173-26) and the Shoreline Management Permit and Enforcement Procedures (WAC 173-27) are the state-adopted standards and guidelines that local governments must follow in drafting their local shoreline master programs.

3. The existing City of Spokane Shoreline Master Program (SMP) was adopted on March 22, 1976 and approved by Ecology on October 5, 1976 to guide and regulate development along the Spokane River and Latah Creek shorelines, which the SMA designates as "shores of the state" and "shores of statewide significance." The SMP was revised several times after adoption, including updates in 1977, 1978, and Supplemental Use Regulations and Administrative Procedures in 1982.

4. Pursuant to RCW 90.58.050, the City of Spokane and the Washington State Department of Ecology share joint authority and responsibility for the administration of the City of Spokane SMP.

5. The Washington State Legislature enacted the Growth Management Act (RCW 36.70A [GMA]) in 1990. In 1995, the Legislature amended the GMA and the SMA to partially integrate the provisions of the two statutes. The amendments collectively added the goals and policies of the SMA as a fourteenth planning goal under the GMA and clarified that the goals and policies of an approved SMP shall constitute a shoreline element of the City's Comprehensive Plan (RCW 36.70A.480). The Legislature also directed Ecology to update the State Shoreline Guidelines to ensure consistency with the SMA and GMA.

6. In December, 2003, Ecology adopted new Shoreline Guidelines (WAC 173-26). The guidelines are guiding parameters, standards, and review criteria for local master programs.

7. Pursuant to RCW 90.58.080, the City is required to review and update its existing Shoreline Master Program on or before December 1, 2013 to ensure conformance with the required elements of the 2003 Shoreline Guidelines.

8. The City of Spokane entered into a grant agreement with Ecology in the spring of 2005 to update the City's SMP as an "early adopter" jurisdiction. Ecology mandated that the City complete 11 tasks:

a. Performance Coordination

The Shoreline Technical Advisory Committee (STAC) was initiated in January of 2006 and consisted of state, local, federal and tribal government agency and private organization representatives with the necessary technical expertise to assist the City of Spokane Planning Services Department in the review and update of the SMP. The purpose of the STAC was to share information, encourage cooperation, and promote consistent inter-governmental activity associated with the SMP Update. The STAC reviewed and gave input on the technical information associated with the SMP update, such as the Inventory and Analysis.

The City of Spokane has coordinated with the Department of Ecology throughout the update process.

b. Secure Qualified Consultant Services

The City issued a Request for Qualifications/Proposal in February, 2006.

URS Corporation was chosen as the consultant on March 9, 2006. The final contract/scope of work with URS was authorized by the City Council on March 27, 2006 and signed on March 29, 2007.

c. Conduct Participation Process and Integration Strategy

Pursuant to RCW 90.58.130, 36.70A.140, and WAC 173-26-201 (3)(b)(i), WAC 173-26-090 and WAC 173-26-100, the City prepared a public participation plan to facilitate early, continuous, and substantial public participation in drafting the SMP. The City Council adopted the Plan by resolution on April 3, 2006.

The public had extensive opportunity to participate throughout the update process. The SMP Update team held several open houses; formed a 26-member SMP Policy Committee that met twice a month for six months in early 2007; held three Stakeholder meetings in the fall of 2006; and developed an email address where the public could send written comments: shorelines@spokane-planning.org. Several SMP articles and notices for open houses and hearings were printed in local publications; a brochure was distributed at community events; staff made numerous presentations to local civic organizations and neighborhoods and participated in SMP educational programs on Cable Channel 5; the Plan Commission and City Council held frequent workshops and study sessions over the nearly three-year update process; and the Mayor and Community Assembly were updated regularly on the progress of the SMP Update. The staff also developed and maintained a web site to keep the public informed: www.spokaneplanning.org/shorelines.

d.- f. Inventory and Map Shoreline Conditions, Conduct Analysis, Prepare Analysis Report and Map Portfolio

Pursuant to the grant agreement and WAC 173-26-201(3)(c) and (3)(d), Spokane was required to document existing shoreline conditions of the Spokane River and Latah Creek

within the city limits and present a baseline inventory and analysis of ecosystem-wide processes and shoreline ecological functions. URS Corporation conducted the Shoreline Inventory and Analysis, submitting the draft Analysis Report and Map Portfolio in March, 2007. A final draft was submitted in July, 2008.

g. Develop Shoreline Environment Designations

In 2007, six shoreline environments, which include maps and management policies, were designated: Natural, Urban Conservancy, Shoreline Residential, Limited Urban, Intensive Urban and Wastewater Treatment Plant. These designations are a regulatory overlay to the underlying zoning and provide a framework for allowing certain uses.

h. Restoration Plan

Pursuant to WAC 173-26-201(2)(f), the Shoreline Master Program is required to include a Shoreline Restoration Plan component that establishes overall goals and objectives for City-wide shoreline restoration efforts, identifies and prioritizes restoration opportunities, and prescribes generalized treatment options for various restoration scenarios. URS Corporation developed the Restoration Plan and submitted a draft to the City in April, 2008. A final draft was submitted in July, 2008.

i. Develop Shoreline Goals, Policies, and Regulations

The Shoreline Policy Committee was formed in January of 2007 and was composed of property owners, business owners, and representatives from government agencies, neighborhoods, institutions, recreational groups, environmental organizations, and civic groups. The purpose of the committee was to assist staff with the review and development of goals and policies for the environment designations and each element of the SMP. The environment management policies were completed in the spring of 2007; goals and policies for each of the ten elements of the SMP were completed in the fall of 2007.

Shoreline Regulations are consistent with RCW 90.58, the Shoreline Management Act of 1971, WAC 173-26, State Master Program Approval/Amendment Procedures and Master Program Guidelines, and WAC 173-27, Shoreline Management Permit and Enforcement Procedures, for obtaining a shoreline substantial development permit, exemption from a shoreline substantial development permit, shoreline conditional use permit, shoreline variance permit, permit and application revisions, and other procedures pertaining to shorelines. The draft SMP regulatory package was completed in the fall of 2008.

j. Address Cumulative Impacts

URS Corporation submitted a draft Evaluation of Cumulative Impacts in July, 2008. It is the last step performed in the SMP Update process and is used for submittal of the SMP to Ecology only. It is not part of the SMP adoption package. After City adoption of the SMP, the cumulative impacts analysis and SMP adoption package will be submitted to Ecology for Ecology review and adoption.

k. Adoption of Final SMP

The SMP is being adopted in phases:

Phase I includes the Shoreline Inventory and Analysis and Environment Designations, which include Management Policies and Environment Designations Maps. The Spokane City Council adopted Phase I of the Shoreline Master Program by Resolution on July 17, 2007.

Phase II includes the Restoration Plan, goals and policies for each element of the SMP, and the regulatory package. Phase I and Phase II will be adopted by City Ordinance.

The Plan Commission held a public hearing and took testimony on the proposed SMP on September 10, 2008 at City Hall in the Council Chambers, 808 West Spokane Falls Boulevard.

The Plan Commission completed deliberations on September 24, 2008, and by a vote of six to zero, recommended approval of the proposed SMP (Phase I and Phase II) to City Council, with changes as deliberated. The Plan Commission opted to defer to the Council with respect to the two height alternatives in the SMP Downtown and Campus Districts.

Notice of the City of Spokane Plan Commission Public Hearing was published in the Spokesman-Review on August 27 and September 3, 2008. Postcards were mailed on August 25, 2008 to over 3,000 property owners, tax payers, and residents/tenants of the property. Council President Shogan announced the Plan Commission public hearing on Monday, September 8, 2008. The public hearing notice was posted on the Planning Services Web Site on August 27, 2008.

The City Council hearing on the SMP is scheduled for October 27, 2008.

The City adoption process will be followed by the State Department of Ecology adoption process.

9. A State Environmental Policy Act (SEPA) Environmental Checklist was completed and a Determination of Nonsignificance issued for the SMP, with notice published in the Spokesman-Review on August 27 and September 3, 2008.

10. Legislation passed in 2003 (ESHB 1933) clarifies that critical areas within shorelines are to be "designated" under the GMA, but "protected" by the SMP at a level that is "at least equal to the Spokane Critical Areas Ordinances."

11. Critical areas within the Shoreline Jurisdiction are protected pursuant to SMC 17E.060.170 and 17E.060.090(E), in addition to the Critical Areas Ordinances in Title 17E, effective January 6, 2008: Chapter 17E.010 SMC, Aquifer Protection; Chapter 17E.020 SMC, Fish and Wildlife Conservation Areas; Chapter 17E.030 SMC, Floodplain Management; Chapter 17E.040 SMC, Geologically Hazardous Areas; and Chapter 17E.070, Wetlands Protection.

12. The Shoreline Goals and Policies, Environment Management Policies and maps, and the purpose and designation criteria for each shoreline environment are incorporated into the Comprehensive Plan as the new Chapter 14, Shorelines.

13. The existing Comprehensive Plan Chapter 14, Glossary, is amended as Chapter 15, Glossary, to include SMP terms.

14. The Comprehensive Plan Volume III, SMP Background Information, will be incorporated into the Comprehensive Plan by reference and includes the Inventory and Analysis, SEPA Checklist, public participation documents, Critical Areas Ordinances, Cumulative Impact Analysis, Submittal Checklist, and other pertinent background information pertaining to the SMP Update.

15. The Shoreline Regulations are incorporated into the Unified Development Code as Chapter 17E.060 SMC.

16. The shoreline permit procedures are incorporated into the amended 17G.060 SMC, Land Use Application Procedures.

17. SMC Chapter 17A.020, Definitions, is amended to incorporate SMP definitions to provide clarity for the public and Director of specialized terminology associated with the SMP.

18. SMC 1.05.160, Land Use Violations, is amended to implement a civil infraction system pertaining to the SMP.

19. The Shoreline Restoration Plan, a component of the SMP, will be a stand-alone document.

20. The existing Shoreline Master Program is repealed.

21. The Plan Commission received the December, 2006 publication "Advisory Memorandum: Avoiding Unconstitutional Takings of Private Property," from the State of Washington, Office of the Attorney General, as required by RCW 36.70A.370.

22. The Plan Commission hereby adopts the foregoing, together with the SMP documents, as its findings.

CONCLUSIONS:

1. The City of Spokane adoption by ordinance of Comprehensive Plan Chapter 14, Shorelines, amended Comprehensive Plan Chapter 15, Glossary; City of Spokane Shoreline Restoration Plan; Unified Development Code Chapter 17E.060 SMC, Shoreline Regulations, amended Chapter 17A.020 SMC, Definitions, amended Chapter 17G.060 SMC, Land Use Application Procedures, and amended SMC 1.05.160, Land Use Violations, will promote the protection of the City's shorelines, as required by the both the Shoreline Management Act and Growth Management Act.

2. The City of Spokane SMP adoption by ordinance will satisfy the Washington State Department of Ecology grant agreement requirements for the City of Spokane SMP Update.

3. Adoption of the SMP is of public necessity, will benefit the general welfare of the community, constitutes good planning practices, and will not be unduly detrimental to properties within the Shoreline Jurisdiction.

4. Mechanisms to ensure opportunity for public input into the planning process fulfilled legal requirements and the intent and policies of the SMA and GMA.

5. The City's Shoreline Master Program is supported by maps. It is recognized that the maps only generally depict boundaries and are for informational purposes only. The criteria for identification of the Shoreline Jurisdiction in the regulations shall prevail.

6. The environmental review and Determination of Nonsignificance for the proposed draft SMP fulfills the requirements and intent of 17E.050 SMC, SEPA, and the State Environmental Policy Act.

7. Upon adoption of the SMP, the City will officially publish these additions and amendments:

- a. Comprehensive Plan Chapter 14, Shorelines
- b. Comprehensive Plan Chapter 15, Glossary
- c. Comprehensive Plan Volume III, SMP Background Information
- d. Shoreline Restoration Plan
- e. Chapter 17E.060 SMC, Shoreline Regulations
- f. Amended Chapter 17A.020 SMC, Definitions,
- g. Amended Chapter 17FG.060 SMC, Land Use Application Procedures,
- h. Amended Chapter 1.05.160 SMC, Land Use Violations.

8. Chapter 11.15 SMC, Shoreline Master Program Use Regulations and Procedures, will be repealed.

These findings and conclusions were approved on October 8, 2008.

A handwritten signature in black ink, appearing to read "Michael Ekins", with a stylized flourish at the end.

Michael Ekins, President
Spokane Plan Commission

RECEIVED

NOV 14 2007

AgSht01-18-2006



AGENDA SHEET FOR COUNCIL MEETING OF: November 26, 2007

CITY CLERK'S OFFICE
SPOKANE, WASubmitting Dept.
Development IncentivesContact Person/Phone No.
Melissa Eadie X6069Council Sponsor
Councilman French**ADMINISTRATIVE SESSION**

- ☐ Contract
- ☐ Report
- ☐ Claims

LEGISLATIVE SESSION

- ☐ Emergency Ord
- ☐ Resolution
- ☐ Final Reading Ord
- ☒ First Reading Ord
- ☐ Special Consideration
- ☐ Hearing

CITY PRIORITY

- ☐ Communications
- ☐ Economic Development
- ☒ Growth Management
- ☐ Human Services
- ☐ Neighborhoods
- ☐ Public Safety
- ☐ Quality Service Delivery
- ☐ Racial Equity/Cultural Diversity
- ☐ Rebuild/Maintain Infrastructure

CLERK'S FILE

RENEWS

CROSS REF

ENG

BID

REQUISITION

STANDING COMMITTEES

(Date of Notification)

- ☐ Finance
- ☐ Neighborhoods
- ☐ Planning/Community & Econ Dev

☐ Public Safety☐ Public Works

Neighborhood/Commission/Committee Notified:
Community Assembly, Plan Commission
Action Taken: Plan Commission: Recommended
for approval

AGENDA**WORDING:**

(If contract, include the term.)

An ordinance relating to aquifer protection; retitling chapter 17E.010 and amending SMC sections 17E.010.010, 17E.010.030, 17E.010.050, 17E.010.060, 17E.010.095, 17E.010.120, 17E.010.140, and 17E.010.150.

BACKGROUND:

(Attach additional sheet if necessary)

See Attached.

RECOMMENDATION: Approve**Fiscal Impact:** N/A**Budget Account:** ☐ N/A☐ Expenditure: \$

#

☐ Revenue: \$

#

☒ Budget Neutral**ATTACHMENTS:** Include in Packets:

Final Draft Ordinance, Summary of Changes, Best Available Science Review, Cover Letter, Plan Commission Findings and Conclusions, Aquifer Sensitive Area and Aquifer SHADI maps.

On file for Review in Office of City Clerk:

SIGNATURES:

Department Head

Division Director

Finance

Legal

Deputy Mayor for Mayor

Council President

DISTRIBUTION:

Planning – K Pelton
Development Incentives – M Eadie

Planning – P Hall

COUNCIL ACTION:

FIRST READING OF THE
ABOVE ORDINANCE WAS HELD ON
November 26, 2007
AND FURTHER ACTION WAS DEFERRED
Seni Hester
CITY CLERK

PASSED BY
SPOKANE CITY COUNCIL:

DEC 03 2007

CITY CLERK

C34151

SHAPING SPOKANE VOLUME III, APPENDIX G
AGENDA SHEET FOR COUNCIL MEETING OF: November 26, 2007



Submitting Dept.
Development Incentives

Contact Person/Phone No.
Melissa Eadie X6069

Council Sponsor
Councilman French

ADMINISTRATIVE SESSION

- ☐ Contract
- ☐ Report
- ☐ Claims

LEGISLATIVE SESSION

- ☐ Emergency Ord
- ☐ Resolution
- ☐ Final Reading Ord
- ☒ First Reading Ord
- ☐ Special Consideration
- ☐ Hearing

CITY PRIORITY

- ☐ Communications
- ☐ Economic Development
- ☒ Growth Management
- ☐ Human Services
- ☐ Neighborhoods
- ☐ Public Safety
- ☐ Quality Service Delivery
- ☐ Racial Equity/Cultural Diversity
- ☐ Rebuild/Maintain Infrastructure

CLERK'S FILE

RENEWS

CROSS REF

ENG

BID

REQUISITION

STANDING COMMITTEES

(Date of Notification)

- ☐ Finance
- ☐ Neighborhoods
- ☐ Planning/Community & Econ Dev
- ☐ Public Safety
- ☐ Public Works

Neighborhood/Commission/Committee Notified:

Community Assembly, Plan Commission

Action Taken: Plan Commission: Recommended
for approval

BACKGROUND:

(Attach additional
sheet if necessary)

The GMA identifies five Critical Areas that must be identified, designated, and protected (RCW 36.70A.030): Wetlands, areas with a critical recharging effect on aquifers used for potable water, frequently flooded areas, geologically hazardous areas, and fish and wildlife habitat conservation areas. In 2002 the GMA was amended to require jurisdictions to take legislative action to review and, if needed, revise their comprehensive plans and development regulations to ensure the plans and regulations comply with the requirements of the act according to a seven-year cycle. The City of Spokane is required to take legislative action by December 1, 2007. In addition, GMA requires that Best Available Science be included in the review of critical areas regulations (RCW 36.70A.172). The public participation process approved by Council in April 2007 was followed, and Best Available Science included in the review that results in the proposed amendments.



CITY PLAN COMMISSION
808 W. SPOKANE FALLS BLVD.
SPOKANE, WASHINGTON 99201-3329
(509) 625-6060
FAX (509) 625-6013

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NOV 16 2007

CITY CLERK'S OFFICE
SPOKANE, WA

November 15, 2007

City Council President Joe Shogan and City Council Members
808 W. Spokane Falls Blvd.
6th Floor City Hall
Spokane, WA 99201

Re: Critical Areas Update – Final Draft Ordinances for Adoption by City Council.

Dear City Council President Joe Shogan and City Council Members:

The Plan Commission has completed its review of the 2007 Critical Area Ordinances Update and forwards the proposed amendments to the City Council. The review and update process followed the public participation process approved by Council in April 2007 along with seven workshops covering the five ordinances. The review included recommended changes to other code sections implementing the critical area regulation amendments. The Plan Commission hearing was held October 24, 2007. After receiving oral and written testimony, the Plan Commission completed deliberations on November 14, 2007. The proposed amendments to these ordinances are forwarded to you with the unanimous approval of the Plan Commission

The early, continuous, and informed participation of citizens in planning processes is a goal and requirement of the Growth Management Act (GMA) (RCW 36.70A.020, .035 and .140). Critical Area identification, designation, and protection are required by GMA and include Geologically Hazardous, Fish and Wildlife Habitat Conservation, Critical Aquifer Recharge, Frequently Flooded, and Wetland Areas. The Plan Commission recognizes that efforts to inform and engage the public, local experts, and state agencies contributed to the positive dialogue and comments during the hearing process.

The Plan Commission also takes this opportunity to note that a recurring theme of the review and update was the administration and implementation of the Critical Area Ordinances (CAO). Many questions were asked of staff regarding public education, departmental processes, and enforcement of the codes protecting critical areas, lives, and public and private property. It was clear to the Plan Commission that updating the regulations would likely be one of several steps in carrying out the intent of the Growth Management Act for critical areas.

The Plan Commission recommends approval of the amendments to the Spokane Municipal Code at 17E.010 Protection of Aquifer Recharge Areas, 17E.020 Spokane Fish and Wildlife Habitat Conservation Areas, 17E.030 Floodplain Management, 17E.040 Spokane Geologically Hazardous Areas, 17E.070 Spokane Wetlands Protection, and 17A.020 Definitions.

Sincerely,

Michael Ekins
President, City Plan Commission

Attachments: Findings and Conclusions

C 34151

SPOKANE PLAN COMMISSION FINDINGS AND CONCLUSIONS***Development Regulation Amendments*****Critical Area Ordinances**

Spokane Municipal Code 17E.010 Aquifer Protection, 17E.020 Fish and Wildlife Habitat Conservation Areas, 17E.030 Floodplain Management, 17E.040 Geological Hazards, 17E.070 Wetlands Protection

November 14, 2007

The City Plan Commission recommends adoption of ordinances amending Spokane Municipal Code (SMC) Chapter 17E.010 relating to protection of aquifer recharge areas and SMC 17E.030 relating to frequently flooded areas, and repealing certain SMC sections and adopting a new Chapter 17E.020 relating to protection of fish and wildlife conservation areas, adopting a new Chapter 17E.040 relating to geologically hazardous areas, and adopting a new chapter 17E.070 relating to protection of wetlands. Hereinafter, the foregoing ordinances will be collectively referred to as the "Critical Areas Ordinances". The Plan Commission recommends adoption of the ordinance amending SMC Chapter 17A.020 relating to definitions for the Unified Development Code.

In making this recommendation, the Commission makes the following findings and conclusions:

FINDINGS:

1. The Washington State Legislature enacted the Growth Management Act (GMA) in 1990. GMA requires cities to adopt development regulations that protect critical areas that are required to be designated under RCW 36.70A.170.
2. GMA also requires cities to periodically review and update development regulations protecting critical areas, and establishes December 1, 2007 as a deadline by which the City of Spokane is required to take action updating its critical area protection ordinances.
3. Critical areas that must be designated under GMA include wetlands, areas with a critical recharging effect on aquifers used for potable water, frequently flooded areas, geologically hazardous areas, and fish and wildlife habitat conservation areas ("Critical Areas").
4. The City Council adopted the Critical Areas Report in 1994. The Report documented the classification, designation, and regulation of wetlands, frequently flooded areas and aquifer recharge areas through the existence of previously adopted ordinances. The Report also classified, designated and proposed a regulation scheme for fish and wildlife habitat conservation areas and geologically hazardous areas.

5. The City of Spokane adopted a Comprehensive Plan in May of 2001 that complies with the requirements of the Growth Management Act, including designated Critical Areas and providing policy support for the protection of Critical Areas in Chapter 9, Natural Environments.
6. The Critical Area Updates referenced herein above (Critical Area Ordinances, Division E Environmental Standards) are consistent with the Comprehensive Plan, and were developed in accordance with an adopted public participation process including an Aquifer Protection and Wetlands Review Group.
7. The proposed amendments to SMC Chapter 17A.020 Definitions are necessary to provide clarity for the public and administrators of specialized terminology associated with the Critical Area Ordinances.
8. Development may result in cumulative impacts to those functions and values of Critical Areas that contribute to and are necessary for a healthy natural environment and perceived quality of life.
9. The development of residences, businesses, shopping areas and other structures, and the clearing of land for accommodation of livestock and for such development all have the potential of adversely and significantly impacting the functions and values of Critical Areas.
10. The unwise development of resource lands or areas susceptible to natural hazards may lead to inefficient use of limited public resources, jeopardize environmental resource functions and values, subject persons and property to unsafe conditions, and affect the perceived quality of life.
11. It is more costly to remedy the loss of Critical Area functions and values than to conserve and protect them from loss or degradation.
12. In determining what Critical Areas are to be afforded a particular degree of protection, the City of Spokane has evaluated a wide range of the best available science with respect to the Critical Areas to make informed decisions that meet the intent of the Growth Management Act and that are also reflective of local needs.
13. The sources of this best available science that were evaluated and included in Critical Areas Ordinances are listed below:
 - **Aquifer Recharge Areas:** General Policies U.S. Code Title 42- The Public Health and Welfare, Chapter 82- Solid Waste Disposal, Subchapter IX- Regulation of Underground Storage Tanks, Spokane Aquifer Water Quality Management Plan, Spokane County, Washington "208" Program, County Engineers Office & The Spokane Regional Planning Conference, Critical Aquifer Recharge Areas-Guidance Document, Washington State Department of Ecology, Washington's Source Water Assessment Program, Washington State Department of Health, Office of Drinking

Water, Washington State Department of Health, Division of Environmental Health, Stormwater Management Manual for Eastern Washington, Washington State Department of Ecology, Water Quality Program, International Fire Code, Spokane Aquifer Joint Board (SAJB) and Aquifer Protection Council 2007 Wellhead Protection Update, Bi-State Spokane-Rathdrum Aquifer Study, City of Spokane Environmental Programs, Washington State Department of Ecology.

- **Fish & Wildlife Habitat Conservation Areas:** Washington State Forest Practices Rules, Washington State Department of Natural Resources, stream typing, timber harvest and riparian zones, Habitat, and Priority habitat and Species Washington State Department of Fish and Wildlife, Habitat Protection Toolkit, Washington Environmental Council, Streamnet Pacific Northwest Interactive Mapper.
- **Frequently Flooded Areas:** Yakima County's Review of Best Available Science For Inclusion in Critical Areas Ordinance Update, October 2006, King County Best Available Science, Volume 1, Review of Science Literature, Thurston County, Flood and Channel Migration Hazard Areas, Department of Ecology – Floods Section, Department of Homeland Security (FEMA).
- **Geologically Hazardous Areas:** Dr Richard Orndorff, EWU consulted for review of this ordinance and mapping of geohazards in the City of Spokane, U.S. Department of Agriculture Natural resources Conservation Service.
- **Wetlands:** Wetlands in Washington State, Volume 1: A Synthesis of the Science, Wetlands in Washington State, Volume 2: Guidance for Protecting and Managing Wetlands , Washington State Wetland Rating System for Eastern Washington, Wetland Mitigation in Washington State Part 1: Agency Policies and Guidance, Wetland Mitigation in Washington State Part 1: Agency Policies and Guidance, Dr. Robert Quinn, EWU, Dr. Mike Folsom, EWU, Larry Dawes, qualified wetland professionals with the City of Spokane, Jeremy Sikes, Dept of Ecology, wetlands professional, City of Spokane Developer Services staff Kris Becker, PE.

14. Protection standards for one Critical Area often provide protection for one or more other Critical Areas.

15. Critical Areas may also be protected by other actions by the City of Spokane, such as stormwater management standards, critical area restoration, and public education; and from other regulations, such as the Forest Practices Act, the Shoreline Management Act, and the State Environmental Policy Act.

- Forest Practices Act
- Municipal Water Law
- Shoreline Management Act
 - Chapter 11.15 SMC Shoreline Master Program
- State Environmental Policy Act (SEPA)
- Division D Citywide Standards SMC

- Concurrency Certification, Stormwater Facilities Stormwater Facilities
- Division E Environmental Standards SMC
 - Aquifer Protection, Fish & Wildlife Conservation, Floodplain Management, SEPA, Wetland
- Division G Administration and Procedures SMC
 - Building and Construction Permits, Land Use Application Procedures, Planned Unit Developments, Subdivisions
- Division I Enforcement
- Chapter 1 SMC
 - General Provisions, Civil Infraction System
- Chapter 13 SMC Public Utilities and Services
- Water Stewardship Program

16. Aquifer Recharge Areas: WAC 365-190-080 defines well head protection areas, sole source aquifers, special protection areas, and other areas that are susceptible or vulnerable to ground water contamination as areas with a critical recharging effect on aquifers used for potable water (also referred to as critical aquifer recharge areas), the City of Spokane's drinking water comes from groundwater supplies, once ground water is contaminated it is difficult, costly, and sometimes impossible to clean up, preventing groundwater contamination is necessary to avoid exorbitant costs, hardships, and potential physical harm to people, *Guidance Document for Establishment of Critical Aquifer Recharge Area Ordinances*, by the Department of Ecology, 2000, includes scientific recommendations for protecting groundwater, including limiting certain uses and the intensity of development in critical aquifer recharge areas, and potable water is an essential life-sustaining element.

17. Fish and Wildlife Habitat Conservation Areas: Fish and wildlife habitat conservation areas perform many important physical and biological functions that benefit the City of Spokane and its residents, including but not limited to: maintaining species diversity and genetic diversity; providing opportunities for food, cover, nesting, breeding and movement for fish and wildlife; serving as areas for recreation, education and scientific study and aesthetic appreciation; helping to maintain air and water quality; controlling erosion; and providing neighborhood separation and visual diversity within urban areas, wetlands and streams are environmentally sensitive and serve numerous natural functions and values. These functions include wildlife and fisheries habitat, water quality protection, flood protection, shoreline stabilization, stream flow, and ground water recharge and discharge. In many situations these functions cannot be adequately replicated or replaced, the scientific literature supports in the inclusion of protective buffers from streams to provide sediment control, nutrient inputs to downstream waters, large woody debris, and other functions important to riparian areas, the Washington Department of Fish and Wildlife has prepared management recommendations for the preservation of priority habitat and species, which are based on the best available science, and include, in some instances, recommended protective buffer distances, the Department of Natural Resources has classified watercourses according to two stream-typing systems

based on channel width, fish use, and perennial or intermittent status and WAC 365-190-080(5) grants [the City] the flexibility to make decisions in the context of local circumstances, and specifically excuses local jurisdictions from being required to protect "all individuals of all species at all time."

18. **Frequently Flooded Areas:** Flood hazard areas are subject to periodic inundation that results in loss of life and property, health, and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare, these flood losses are caused by development in areas prone to inundation that increase flood heights and velocities, and when inadequately anchored, damage uses in other areas. Uses that are inadequately floodproofed, elevated, or otherwise protected from flood damage also contribute to flood loss, floodplain and stream connectivity are major elements in maintaining healthy riparian habitat and off-channel habitats for the survival of fish species and conveyance of floodwaters. If river, floodplains and other systems are not viewed holistically as biological, geomorphological units, this can lead to serious degradation of habitat and increase flood hazards, which, in turn, can contribute to listing of various fish species as threatened or endangered and result in extraordinary public expenditures for flood protection and relief, and frequently flooded areas, including the 100-year floodplain and the floodway, are commonly mapped on flood insurance maps, often known as Flood Insurance Rate Maps, or FIRMs.
19. **Geologically Hazardous Areas:** Geologically hazardous areas are subject to periodic geological events that results in loss of life and property, health, and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare, geologic hazards may be exacerbated by development and human activity in sensitive areas, and impacts resulting from geologic hazards may be reduced by limiting development and human activity within or adjacent to the geologic hazard, and some geologic hazards may be intensified during periods of consistent or heavy rainfall that results in ground saturation or surface water drainage flows.
20. **Wetlands:** Wetlands and streams are environmentally sensitive and serve numerous natural functions and values. These functions include wildlife and fisheries habitat, water quality protection, flood protection, shoreline stabilization, stream flow, and ground water recharge and discharge. In many situations these functions cannot be adequately replicated or replaced, the scientific literature supports in the inclusion of protective buffers from wetlands to provide sediment control and nutrient inputs to wetlands, and to protect important wetland functions, wetlands are identified and rated according to the *Washington State Wetland Identification and Delineation Manual*, and *Washington State Wetland Rating System* (Eastern and Western Washington), prepared by the Department of Ecology, the scientific literature supports protective buffers ranging from 25 to 300 feet of relatively intact native vegetation to adequately protect wetland functions and values, appropriate wetland mitigation ratios – ratios of areas of

wetland replacement and enhancement to that altered or destroyed – are established in *Wetland Mitigation Replacement Ratios: Defining Equivalency*, published by the Department of Ecology, 1992.

21. A SEPA Environmental Checklist was completed and a Determination of Non-Significance issued, with notice published in the Spokesman-Review on October 5, 2007.
22. An Open House was held on October 11, 2007. Notice of the Open House was mailed to property owners with vacant and or redevelopable land in potential Critical Areas. Notice was also published in the Spokesman-Review.
23. Notice of City of Spokane Plan Commission Public Hearing on the amendments to five Critical Areas Ordinances was published in the Spokesman-Review on October 15, 2007.
24. The Plan Commission held a public hearing and took testimony on the Critical Areas Ordinances on October 24.
25. Comments submitted to the written record from Washington Department of Fish & Wildlife, Futurewise, and Avista Corporation were addressed individually by staff and the Plan Commission. Response to comments resulted in the addition of priority species to 17E.020 per WDFW, and a structural setback from a critical area buffer to 17E.020 and 17E.070 based on BAS protection of buffers as a Best Management Practice (BMP) as commented by WDFW, Futurewise, and Dept. of Ecology. All other comments and responses are recorded as addressed by the regulations, required by BAS, or requirements of other regulatory agencies.
26. The Plan Commission completed deliberations on 17E.010, 17E.030, and 17E.040 SMC on November 6, 2007. The Plan Commission completed deliberations on 17E.020 and 17E.070 SMC on November 14, 2007. The Plan Commission recommends all five Critical Area Ordinance amendments go forward to the City Council with changes as deliberated.
27. The U.S. Constitution prohibits the taking of private property without just compensation.

CONCLUSIONS:

1. The review and subsequent amendments to Aquifer Protection, Fish and Wildlife Habitat conservation Areas, Floodplain Management, Geologically Hazardous Areas, and Wetlands Protection regulations will promote the protection of the City's Critical Areas, as required by the Growth Management Act.
2. Working with state agencies, consulting with other jurisdictions, consulting with qualified local scientific experts, and researching the latest reports and studies, the City has incorporated the "best available science" into the amendments of

these ordinances. These ordinances should be updated as new and better science is developed.

3. The environmental review and determination for the proposed amendments to the regulations fulfilled the requirements and intent of the Spokane Environmental Ordinance and the State Environmental Policy Act.
4. Adoption of these amendments is of public necessity; will benefit the general welfare of the community; constitutes good planning practices; and will not be unduly detrimental to properties within critical areas.
5. Mechanisms to ensure opportunity for public input into the planning process fulfilled legal requirements and the intent and policies of the Plan Commission.
6. The City's Critical Area Ordinances are supported by maps showing designated Critical Areas. It is recognized, however, that some Critical Areas may not be mapped. Mapping shall be for informational purposes only, and the criteria for identification of Critical Areas in the regulations shall prevail.
7. Adoption of these changes will officially amend Chapters 17A.020, 17E.010 and 17E.030 of the SMC, and will repeal certain chapters of the SMC and replace those chapters with new Chapters 17E.020, 17E.040, and 17E.070 SMC.

These findings and conclusions were approved on November 14, 2007

Michael Ekins, President
Spokane Plan Commission

City Council Hearing – Critical Areas Update

November 26, 2007

Aquifer Recharge Area Protection- Summary of Substantive Changes

Division E Environmental SMC 17E.010

Section	Change
17E.010.010 (A), (D) (E)	Amended Title. Purpose Statement – added GMA and Shoreline Master Program required for consistency. Specified Aquifer Sensitive Areas, and wellhead protection areas. Augmented protection of the aquifer statements. (D) Specified Critical Materials Handbook, Materials List, and Activities List. (E) Added Relationship to other Regulations section.
17E.010.030	Re-stated the severability clause.
17E.010.050	Critical Review Requirements - Added authority to require protective measures as deemed necessary to prevent and/or contain spills. Costs of compliance to be borne by applicant.
17E.010.060	New Storage Systems – Moved provisions to 17E.010.050 (above)
17E.010.095 (A)(b)(iii)	Standards for Uses - Added specific size parameters to cover containment requirements where multiple small containers are stored.
17E.010.120 (A) (B)	Other Activity Subject to Critical Review (A) Added mining to section controlling activities that expose the aquifer, or enhance access to exposure by contaminants. Strengthened aquifer protection language. (B) Linked to City Stormwater requirements, specifically impervious surfaces, and removed exemption for review of creation of expansion of pollutant generating impervious surfaces.
17E.010.140 (D)	Appeals – Changed “convenient” to “appropriate and necessary”
17E.010.150 (A)	Regulations – Changed title of administrative authority from “manager of engineering services” to “division director of public works and utilities.”

Aquifer Recharge Protection Areas BAS Review Code Provisions Based on BAS

Best Available Science	<u>Spokane Municipal Code 17E.010 Aquifer Protection</u>
<p><i>General Policies</i></p> <p>U.S. Code Title 42- The Public Health and Welfare, Chapter 82- Solid Waste Disposal, Subchapter IX- Regulation of Underground Storage Tanks</p> <ul style="list-style-type: none"> Provides regulation regarding underground storage tanks. <p><u>Spokane Aquifer Water Quality Management Plan, Spokane County, Washington "208" Program, County Engineers Office & The Spokane Regional Planning Conference</u></p> <ul style="list-style-type: none"> Made part of the State-Wide Plan for Water Quality Management Recommendations were implemented by Spokane City & County Recommended a policy of "no further degradation". Recommended an ongoing aquifer water quality monitoring program Recommendations developed for controlling pollution from <ul style="list-style-type: none"> Agricultural activities Industrial activities Sanitary wastewater disposal Developed "Aquifer Sensitive Area" (ASA) Developed "208" swale concept for stormwater Recommended land use restrictions in ASA <p><u>Critical Aquifer Recharge Areas-Guidance Document,</u></p>	<p>Underground storage tanks are specifically addressed in this ordinance. Article III of the ordinance states "this article addresses specific municipal regulatory requirements applicable to underground storage tanks and associated piping and installations.</p> <p>Section 17E.010.210 requires any person who owns or maintains an underground storage tank to register and permit the tank under this ordinance.</p> <p>A requirement under GMA is to protect the function and values of the critical areas with a goal of "no net loss". Section 17E.010.010(A) states "This chapter...is also directed towards the purposes expressed in SMC 17A.010.020, with special emphasis upon the protection of the Spokane aquifer through implementation of the Spokane Aquifer Water Quality Management Plan.</p> <p>Critical Aquifer Recharge Areas have generally been identified and are mapped in the City GIS system including the Aquifer Sensitive Area from the Spokane Aquifer WQMP. Management zones for wellhead protection will be added as they are finalized.</p> <p>The Spokane Aquifer Water Quality Management Plan was preceded with, and followed up with, aquifer water quality monitoring. Currently the City of Spokane participates with Spokane County and other local purveyors in a coordinated aquifer monitoring plan which includes annual reporting.</p> <p>The currently existing 'Aquifer Protection Council' is a logical extension of the former Technical Advisory Committee.</p> <p>The "bioinfiltration swale" concept has been adopted as a BMP in the State Stormwater Management Manuals</p> <p>The eight-step process outlined in this document has already been completed.</p> <ul style="list-style-type: none"> Areas of high, medium and low susceptibility to contamination have been

Aquifer Recharge Protection Areas BAS Review Code Provisions Based on BAS

Washington State Department of Ecology

Identifies an eight step process for protecting aquifers.

- Identify where groundwater resources are located
- Analyze the susceptibility of the natural setting where groundwater occurs.
- Inventory existing potential sources of groundwater contamination
- Classify the vulnerability of groundwater to contamination events
- Designate areas that are most at risk to contamination events
- Protect by minimizing activities and conditions that pose contamination risk
- Ensure that contamination prevention plans and best management practices are followed
- Manage groundwater withdrawals and recharge

Washington's Source Water Assessment Program, Washington State Department of Health

Requires the State to implement Source Water

Assessment Plans consisting of four major components

- Delineate source water protection areas (SWPA) for each water source
- Inventory each SWPA for contaminant sources
- Conduct a susceptibility assessment for each drinking water source
- Make the findings readily available to interested parties.

identified and mapped by Spokane County.

- Land uses that may potentially contaminate the aquifer have been identified and inventoried.
- Wellhead Protection Plans are in development for drinking wells located within the city limits.
- Critical materials and critical materials activities are regulated under this ordinance.
- A critical materials review is required for all land use permitting.
- BMPs for stormwater are implemented under the Stormwater Management Plan.

Consistent with Department of Health requirements, Spokane's Water & Hydroelectric Services Department had a "Preliminary Assessment of Source Vulnerability" conducted in 1990. A "Ground Water Contamination Susceptibility Assessment Survey" was completed in January 1995.

WA-DOH implementation of this program is achieved through wellhead protection plans, critical aquifer recharge areas ordinances, and watershed control programs among others.

Water purveyors must comply with the provisions of ODW. The requirement to obtain permit through ODW helps ensure compliance.

Permit compliance includes source water quality testing & reporting.

Wellhead Protection planning is a required element, with some implementation already in place via the SAJB and efforts to get wellhead protection zoning in place continuing on now (see discussion below).

Aquifer Recharge Protection Areas BAS Review

Code Provisions Based on BAS

<p><u>Office of Drinking Water, Washington State Department of Health, Division of Environmental Health</u></p> <p>Provides broad oversight for the Department of Health over the design, construction and operation of water systems.</p> <ul style="list-style-type: none"> • Drinking water providers must seek a permit through ODW • Permit process ensures compliance with ODW regulation 	<p>Amendment: <u>Section 17E.010.120 SMC</u> Adds mining to regulated activities and provides review for the creation or expansion of any pollutant generating impervious surface. Provides that Excavations, drillings, or other land use activities, which expose or enhance exposure of the aquifer to access by surface runoff or spills are subject to such aquifer protection, drainage and dispersion measures as may be provided by regulation.</p> <p>Amendment: SMC 17E.010.010 (E) Reference to the City's stormwater and sewer regulations is made. Reference to the City's solid waste regulations is made.</p>
<p><u>Stormwater Management Manual for Eastern Washington, Washington State Department of Ecology, Water Quality Program</u></p> <p>Provides guidance and best management practices for stormwater management. Requires development to account for the following:</p> <ul style="list-style-type: none"> • Preparation of a stormwater site plan - To integrate stormwater management into project planning and design • Construction stormwater pollution prevention – To control erosion and prevent sediment and other pollutants from leaving the site. • Source control of pollution – to prevent stormwater from coming into contact with potential pollutants • Preservation of natural drainage systems – to maximize the extent to which stormwater discharge patterns, rates, and outfall locations remain the same after a development project. • Runoff treatment – to protect water quality in the receiving water by reducing the loads and 	<p>Amendment: Section 17E.010.150 states "The Division Director of Public Works and Utilities" is authorized to adopt and promulgate regulations to enforce the provisions of this chapter. Specific SMC regulations include:</p> <p><u>17E.050.100 SMC SEPA – Environmental Checklist</u> <u>17E.010.05 SMC Aquifer Protection - Critical Reviews - Requirements</u> <u>17D.060 SMC Stormwater Facilities</u> <u>13.02 SMC Solid waste</u> <u>13.03 SMC Sewers</u> <u>13.04 SMC Water</u> Erosion and Sediment (Draft ordinance) Regional Stormwater Management Manual</p> <p>Amendment: Critical Area Ordinances now require a permit prior to any clearing and grading activities – removed the exemption for moving earth materials fifty (50) cubic yards or less. A City of Spokane clearing and grading ordinance would greatly add to the protection of the Aquifer and all Critical Areas. However, administrative policy and procedure provide procedural guidance, and excavation, drilling, and/or grading that exposes the aquifer is addressed at 17E.010.120. Very nearly the entire City is in "Aquifer Sensitive Area" and depth to groundwater varies considerably. <u>Section 17G.080.070 (D)(1) Subdivision Design Standards</u></p>

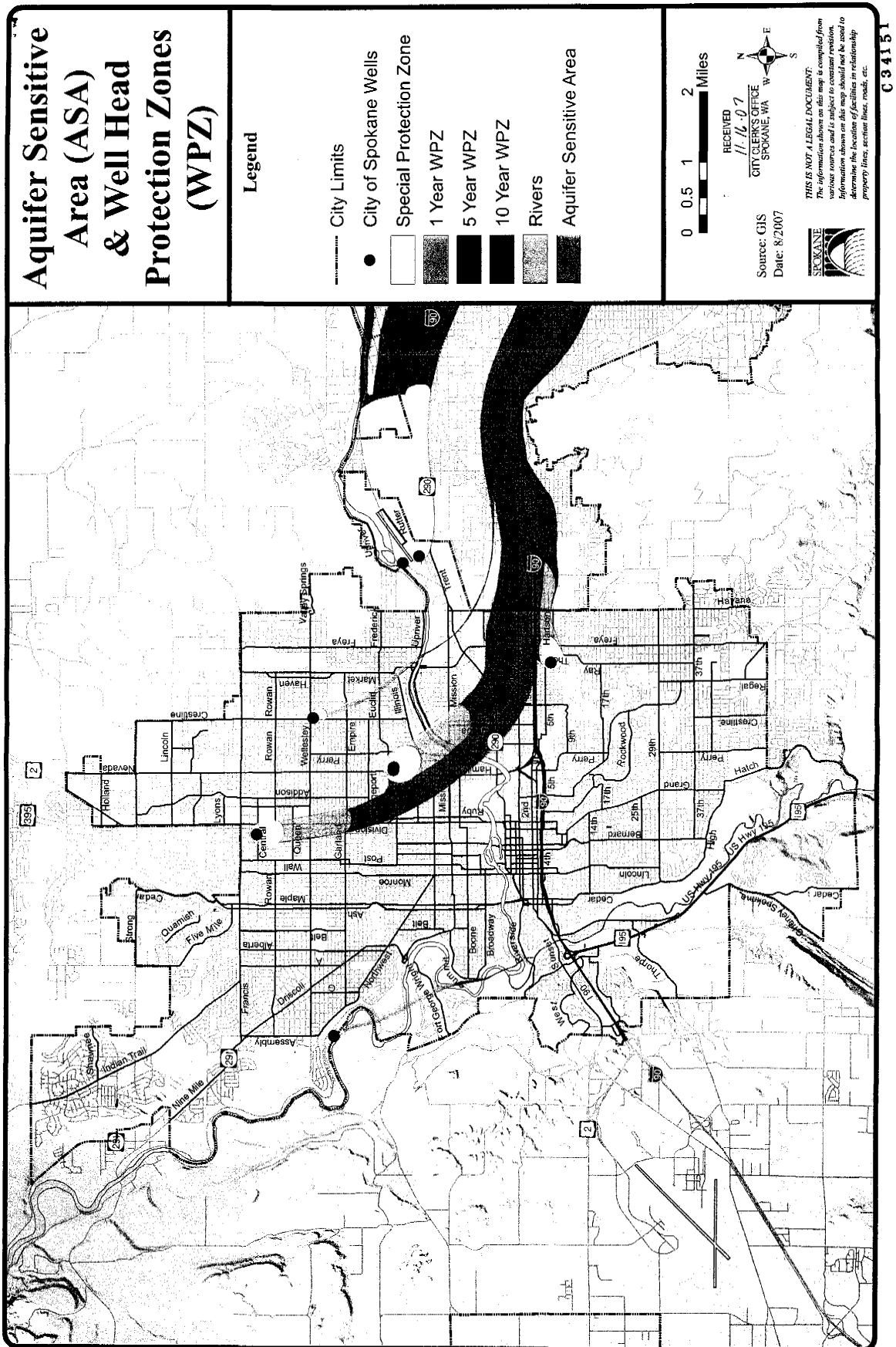
Aquifer Recharge Protection Areas BAS Review Code Provisions Based on BAS

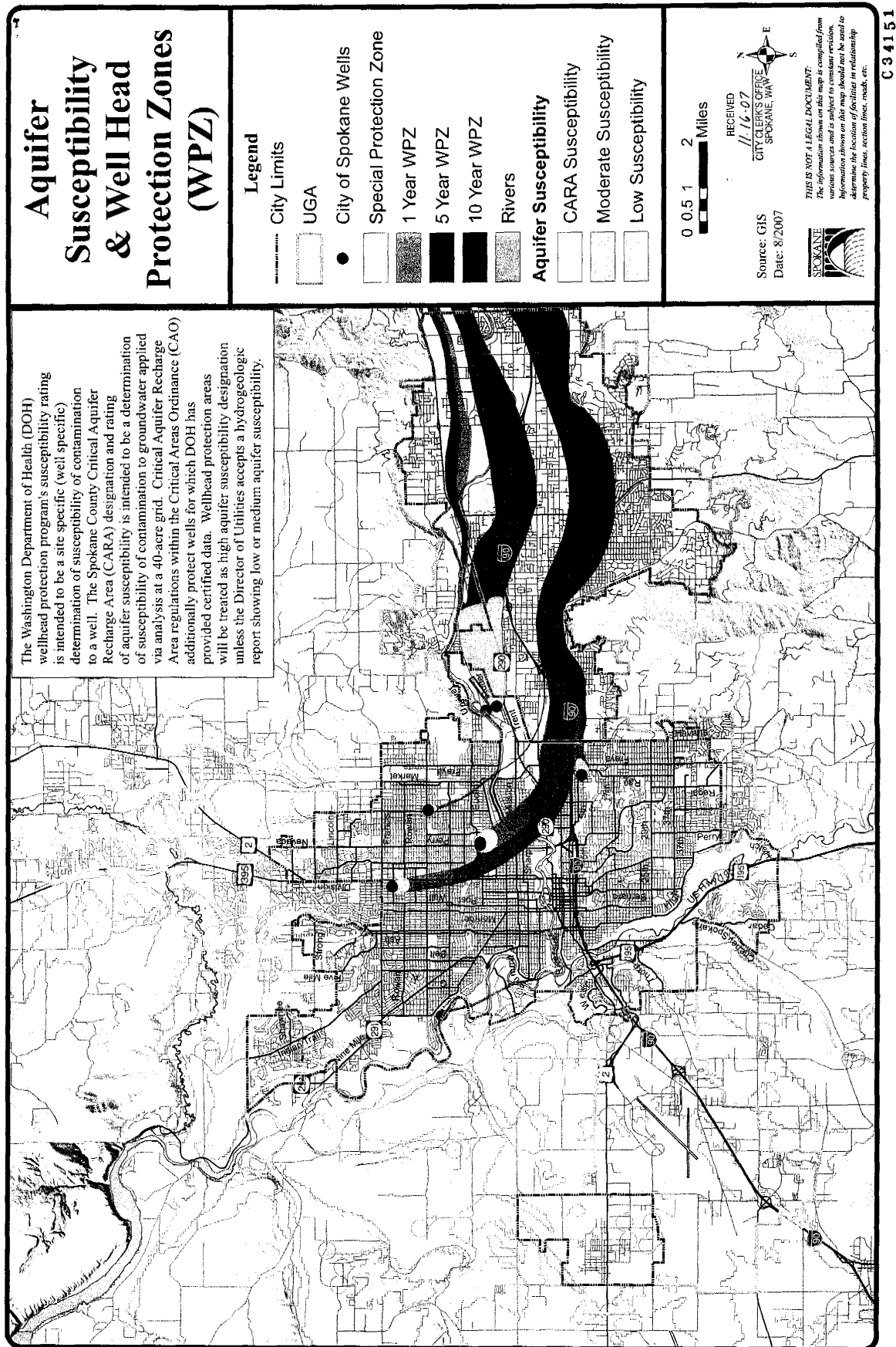
<p>concentrations of pollutant in stormwater using biological, physical and chemical methods.</p> <ul style="list-style-type: none"> • Flow control – to protect stream morphology and habitat by mitigating the impacts of increased storm runoff volumes and flow rates to streams. • Operation and maintenance – to prevent failure of stormwater treatment facilities or improper discharges due to inadequate maintenance or improper operation • Local requirements - To provide for additional conditions or measures needed to protect local water bodies or for other reasons <p>International Fire Code</p> <p>Requires a permit from the Fire Official in connection with the following uses</p> <ul style="list-style-type: none"> • Garages • Automobile wrecking yards • Dust-producing operations • Lumber yards • Manufacturing of cryogenics, batteries, and organic coatings • Storage of compressed gases, hazardous materials, flammable or combustible liquid, waste material • Other equipment and activities <p>Spokane Aquifer Joint Board (SAJB) 2007 Wellhead Protection Update</p> <p>This is an effort underway by Environmental Programs to have wellhead protection zones and identify land use</p>	<p>Grading permit required by Building Code or Appendix</p> <p><u>Section 17A.020.030 SMC</u> Critical Review Officer – Authority. For matters relating to the fire code, the critical review officer is the fire official. The critical review officer carries out and enforces the provisions of this chapter and may issue administrative and interpretive rulings.</p> <p><u>Section 17E.010.340 SMC</u> (Underground Storage Tanks) provides “Any approval, action, permit or other item accomplished under the authority of this article is subject to modification, or imposition of additional conditions or exemption from conditions, all in the fire official’s reasonable discretion “</p>
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Aquifer Recharge Protection Areas BAS Review

Code Provisions Based on BAS

activities which should be regulated within those zones.	<p>Assessment</p> <ol style="list-style-type: none"> 1. All areas meeting the definition of Critical Aquifer Recharge Areas (CARA) are protected with amendment to SMC 17E.010.010. ASA and wellhead protection areas are specified. The Water Quality Management Plan identifies and maps Aquifer Sensitive Areas equivalent to the CARA. 2. Many of the steps required under the DOE guidance manual are outside of Planning Services authority. Other state and local agencies are responsible. Reference to these agencies, their responsibilities and the regulations they promulgate is provided within the ordinance. 3. City of Spokane Environmental Programs recently updated the Aquifer Protection ordinance (June and September 2007) from a Critical Materials perspective and addressed under-and above ground storage tanks (Fire Dept enforcement). Environmental Programs is also currently working with the Spokane Aquifer Joint Board and the Aquifer Protection Council to address wellhead protection regionally. As Planning Services updated the Aquifer Protection ordinance from a GMA Critical Areas perspective with emphasis on Best Available Science, the two departments opened an effective line of communication and are coordinating update efforts. This coordination and cooperation is essential to Aquifer Protection. 4. The primary focus of this ordinance is on Critical Materials. While many critical materials are associated with particular land uses, some land uses are not associated with critical materials and can pose a threat to the Aquifer. Animal feed lots, feed mills, dairy operations, horse-boarding and training, landfills, large animal raising, poultry-raising, riding stables, vineyards, among others are examples. These land uses are determined to be determined adequately addressed under other existing regulations (e.g. zoning, stormwater, wastewater, solid waste, etc.) 5. The intent of the GMA to protect the function and value of the aquifer is achieved when this ordinance is combined with all other regulatory measures. 6. The requirement for the inclusion of BAS is met.
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ORDINANCE NO. C-34151

An ordinance relating to aquifer protection; retitling chapter 17E.010 and amending SMC sections 17E.010.010, 17E.010.030, 17E.010.050, 17E.010.060, 17E.010.095, 17E.010.120, 17E.010.140, and 17E.010.150.

WHEREAS, the Washington State Legislature enacted the Growth Management Act (GMA) in 1990. GMA requires cities to adopt development regulations that protect critical areas that are required to be designated under RCW 36.70A.170; and

WHEREAS, GMA also requires cities to periodically review and update development regulations protecting critical areas, and establishes December 1, 2007 as a deadline by which the City of Spokane is required to take action updating its critical area protection ordinances; and

WHEREAS, critical areas that must be designated under GMA include wetlands, areas with a critical recharging effect on aquifers used for potable water, frequently flooded areas, geologically hazardous areas, and fish and wildlife habitat conservation areas ("Critical Areas"); and

WHEREAS, the City Council adopted the Critical Areas Report in 1994. The Report documented the classification, designation, and regulation of wetlands, frequently flooded areas and aquifer recharge areas through the existence of previously adopted ordinances. The Report also classified, designated and proposed a regulation scheme for fish and wildlife habitat conservation areas and geologically hazardous areas; and

WHEREAS, the City of Spokane adopted a Comprehensive Plan in May of 2001 that complies with the requirements of the Growth Management Act, including designated Critical Areas and providing policy support for the protection of Critical Areas in Chapter 9, Natural Environments; and

WHEREAS, the Critical Area Updates referenced herein are consistent with the Comprehensive Plan, and were developed in accordance with an adopted public participation process including an Aquifer Protection and Wetlands Review Group; and

WHEREAS, development may result in cumulative impacts to those functions and values of Critical Areas that contribute to and are necessary for a healthy natural environment and perceived quality of life; and

WHEREAS, the development of residences, businesses, shopping areas and other structures, and the clearing of land for accommodation of livestock and for such development all have the potential of adversely and significantly impacting the functions and values of Critical Areas; and

WHEREAS, the unwise development of resource lands or areas susceptible to natural hazards may lead to inefficient use of limited public resources, jeopardize environmental resource functions and values, subject persons and property to unsafe conditions, and affect the perceived quality of life; and

WHEREAS, it is more costly to remedy the loss of Critical Area functions and values than to conserve and protect them from loss or degradation; and

WHEREAS, in determining what Critical Areas are to be afforded a particular degree of protection, the City of Spokane has evaluated a wide range of the best available science with respect to the Critical Areas to make informed decisions that meet the intent of the Growth Management Act and that are also reflective of local needs; and

WHEREAS, the sources of this best available science that were evaluated and included in Critical Areas Ordinances are listed below:

Aquifer Recharge Areas: General Policies U.S. Code Title 42- The Public Health and Welfare, Chapter 82- Solid Waste Disposal, Subchapter IX- Regulation of Underground Storage Tanks, Spokane Aquifer Water Quality Management Plan, Spokane County, Washington "208" Program, County Engineers Office & The Spokane Regional Planning Conference, Critical Aquifer Recharge Areas-Guidance Document, Washington State Department of Ecology, Washington's Source Water Assessment Program, Washington State Department of Health, Office of Drinking Water, Washington State Department of Health, Division of Environmental Health, Stormwater Management Manual for Eastern Washington, Washington State Department of Ecology, Water Quality Program, International Fire Code, Spokane Aquifer Joint Board (SAJB) and Aquifer Protection Council 2007 Wellhead Protection Update, Bi-State Spokane-Rathdrum Aquifer Study, City of Spokane Environmental Programs, Washington State Department of Ecology; and

WHEREAS, Critical Areas may also be protected by other actions by the City of Spokane, including, but not limited to, stormwater management standards, critical area restoration, and public education; and from other regulations, such as the Forest Practices Act, the Shoreline Management Act, and the State Environmental Policy Act; and

WHEREAS, WAC 365-190-080 defines well head protection areas, sole source aquifers, special protection areas, and other areas that are susceptible or vulnerable to ground water contamination as areas with a critical recharging effect on aquifers used for potable water (also referred to as critical aquifer recharge areas), the City of Spokane's drinking water comes from groundwater supplies, once ground water is contaminated it is difficult, costly, and sometimes impossible to clean up, preventing groundwater contamination is necessary to avoid exorbitant costs, hardships, and potential physical harm to people, *Guidance Document for Establishment of Critical*

Aquifer Recharge Area Ordinances, by the Department of Ecology, 2000, includes scientific recommendations for protecting groundwater, including limiting certain uses and the intensity of development in critical aquifer recharge areas, and potable water is an essential life-sustaining element; and

WHEREAS, a SEPA Environmental Checklist was completed and a Determination of Non-Significance issued, with notice published in the *Spokesman-Review* on October 5, 2007; and

WHEREAS, an Open House was held on October 11, 2007. Notice of the Open House was mailed to property owners with vacant and or redevelopable land in potential Critical Areas. Notice was also published in the *Spokesman-Review*; and

WHEREAS, notice of City of Spokane Plan Commission Public Hearing on the amendments to five Critical Areas Ordinances was published in the *Spokesman-Review* on October 15, 2007; and

WHEREAS, the Plan Commission held a public hearing and took testimony on the Critical Areas Ordinances on October 24 and completed deliberations November 14, 2007; and

WHEREAS, the review and subsequent amendments to Protection of Aquifer Recharge will promote the protection of the City's Critical Areas, as required by the Growth Management Act; and

WHEREAS, working with state agencies, consulting with other jurisdictions, consulting with qualified local scientific experts, and researching the latest reports and studies, the City has incorporated the "best available science" into the amendments of these ordinances. These ordinances should be updated as new and better science is developed; and

WHEREAS, the environmental review and determination for the proposed amendments to the regulations fulfilled the requirements and intent of the Spokane Environmental Ordinance and the State Environmental Policy Act; and

WHEREAS, adoption of these amendments is of public necessity; will benefit the general welfare of the community; constitutes good planning practices; and will not be unduly detrimental to properties within critical areas; and

WHEREAS, mechanisms to ensure opportunity for public input into the planning process fulfilled legal requirements and the intent and policies of the Plan Commission; and

WHEREAS, the City's Critical Area Ordinances are supported by maps showing designated Critical Areas. It is recognized, however, that some Critical Areas may not

be mapped. Mapping shall be for informational purposes only, and the criteria for identification of Critical Areas in the regulations shall prevail; and

WHEREAS, adoption of these changes will officially amend Chapter 17E.010 of the SMC, --- Now, Therefore:

The City of Spokane does ordain:

Section 1. That the title of chapter 17E.010 is amended to read as follows:

Chapter 17E.010 Critical Aquifer Recharge Areas - Aquifer Protection

Section 2. That SMC section 17E.010.010 is amended to read as follows:

17E.010.010 ((~~In General—Objectives~~)) Title, Purpose and Applicability

- A. This chapter shall be known and may be cited as the "Aquifer Recharge Area Protection Code."
- B. This chapter is based on and implements the City of Spokane Comprehensive Plan and Shoreline Master Program, as amended from time to time. The purpose of this chapter is to protect the public health, safety and welfare by providing protection for environmentally sensitive areas and their functions and values, and by preserving and protecting critical aquifer recharge areas through the regulation of development and other activities critical aquifer recharge areas, and not to create or otherwise establish or designate any particular person, or class, or group of persons who will or should be especially protected or assisted by the terms or provisions of this chapter. It is expressly the purpose of this ordinance to protect the health, safety, and welfare of the general public through protection of local groundwater resources and the public drinking water supply. It is further a general purpose to halt and reverse continued degradation of the Spokane aquifer, to improve the quality of the aquifer, to restrict or prohibit adverse land uses and other practices tending to degrade or negatively affect the purity and quality of the aquifer. It is also directed towards the purposes expressed in SMC 17A.010.020, with special emphasis upon the protection of the Spokane aquifer through implementation of the Spokane Aquifer Water Quality Management Plan.
- C. The requirements of this chapter apply to all activities and development occurring in Critical Aquifer Recharge Areas, as defined in this chapter. Critical Aquifer Recharge Areas (CARA) include locally identified Aquifer Sensitive Areas (ASA) and wellhead protection areas. All areas within the City meeting the definition of a critical aquifer recharge area, regardless of any formal identification, are hereby designated critical areas and are subject to the provisions of this chapter.

~~((B-))~~ D. This chapter provides for:

1. identification of substances designated "critical materials," which, in specified amounts, could create a hazard to the Spokane aquifer, and activities associated with them, designated "critical materials activities;"
2. development of standards for the handling, use, storage and transportation of such substances and precautions attendant to such activities; and
3. establishment of appropriate disclosure, monitoring and control procedures;

all as detailed in the Critical Materials Handbook, the Critical Materials List, and the Critical Materials Activities List.

~~((C-))~~ This chapter does not supersede or replace other laws or regulations. Its provisions are cumulative and apply in addition to such other laws and regulations.

~~((D-))~~ It is the general purpose of this chapter to protect the public health and safety. It is further a general purpose to halt and reverse additional continued degradation of the Spokane aquifer, to improve the quality of the aquifer, to restrict or prohibit adverse land uses and other practices tending to degrade or negatively affect the purity and quality of the aquifer, and to establish a regulatory program consistent with these purposes.

~~((E-))~~ It is not a purpose of this chapter to extend specific regulatory protection to any individual person or class of persons, and no duty shall be deemed created or implied to any individual, group, or class by virtue of this chapter or any regulation, requirement, order, action, or inaction of the City, its employees, or agents.

E. Relationship to Other Regulations.

1. This chapter applies as an overlay to other laws, regulations, and requirements, including, but not limited to, zoning, land use standards, building standards and codes, stormwater management requirements, solid waste management requirements, wastewater management requirements, the shoreline management plan, critical area protection requirements, wellhead protection plans, and other regulations, presently in effect and as amended from time to time.
2. Any area constituting a critical aquifer recharge area under this chapter that adjoins another type of critical area shall have the buffer and meet the

requirements that provide the most protection to the critical areas involved. When the provisions of this chapter vary from or are inconsistent with any other regulation, easement, covenant, or deed restriction, the provision that provides the most protection to the critical area shall apply.

3. This chapter shall apply concurrently with review conducted under the State Environmental Policy Act (SEPA), as locally adopted, 17.050.020 SMC. Any conditions required pursuant to this chapter shall be included in the SEPA review and threshold determination.
4. The administrative procedures followed during the critical area review process shall conform to the standards and requirements of City development regulations. This shall include, but not be limited to, timing, appeals, and fees associated with applications covered by this chapter.

Section 3. That SMC section 17E.010.030 is amended to read as follows:

17E.010.030 Pre-emption – Severability

~~((The preemption or legal invalidity of any provision or regulation shall not affect the remainder if the same can be reasonably enforced.))~~

- A. This article intends to establish a municipal regulatory program to be adopted and administered in coordination with other developing federal, state and local programs.
- B. In case of pre-emption, this article shall be interpreted and applied consistent with the pre-emptive law. In case of direct conflict or invalidity of any portion of this article or regulation promulgated under its authority, the remainder of the article or regulation is not affected, to the extent permitted by law.

Section 4. That SMC section 17E.010.050 is amended to read as follows:

17E.010.050 Critical Review – Requirements

- A. Critical review and compliance with requirements established thereby are required for all critical review actions.
- B. The critical review officer may require such protective measures as are deemed necessary to prevent and/or contain spills, including draw-out pumping, automatic shutdown devices, monitoring and metering equipment and periodic testing or other inspections.

- C. Costs of compliance are the responsibility of the party or entity seeking the installation or remodeling.

Section 5. That SMC section 17E.010.060 is amended to read as follows:

17E.010.060 New Storage Systems – Tanks – Associated Piping

((A.)) From and after March 10, 1986, no new or replacement storage system, tank and/or associated piping for a petrochemical product or other critical material is permitted without a secondary containment system approved by the critical review officer. This provision does not apply to ordinary maintenance or repair activity.

~~((B. The critical review officer may require such protective measures as are deemed necessary to prevent and/or contain spills, including draw-out pumping, automatic shutdown devices, monitoring and metering equipment and periodic testing or other inspections.~~

~~C. Costs of compliance are the responsibility of the party or entity seeking the installation or remodeling.))~~

Section 6. That SMC section 17E.010.095 is amended to read as follows:

17E.010.095 Standards for Uses

A. When above-ground storage of critical materials is included in the design of any facility, that facility shall be designed so that:

1. a secondary containment mechanism that will prevent any leak or spill from leaving the site or infiltrating into the ground below the site shall be included in the design.
 - a. Secondary containment shall be provided in areas of the facility where the critical materials are stored, used and along corridors where chemicals are moved within the facility.
 - b. The containment for the facility shall be capable of the largest of the following:
 - i. One hundred ten percent of the critical material volume.
 - ii. Three times the volume of the largest container or ten percent of the total volume (whichever is greater) of critical materials where there are a number of small containers.

- iii. Twenty minutes of fire sprinklers plus the largest container of material (when the building is provided with fire sprinklers).
- c. Outdoor facilities shall make provision for containing the required volume of spill and precipitation that occurs during a storm event equivalent to that required for storm drainage design.
- 2. secondary containment facilities should facilitate the proper clean up and disposal of spills or leaks.
 - a. No secondary containment facility shall be connected to any sanitary or storm sewer system, including drywells, without pretreatment facilities appropriate to the substances maintained on site installed between the containment facility and the discharge.
 - b. A spill cleanup plan shall be developed to define proper procedures for maintaining and cleaning containment facilities and to identify proper disposal practices for any critical materials removed from the containment facilities.
- 3. permanent disposal of any waste containing critical materials shall not be allowed within the City of Spokane, except:
 - a. waste disposed of at a site approved as compliant with WAC 173-351 or similar applicable regulatory requirements by the Washington State department of ecology and permitted by the Spokane regional health district; and
 - b. any waste disposed as part of, and consistent with, a federal or state-approved cleanup plan, where it also appears that the division director of public works and utilities has been given meaningful and actual individual written notice of the cleanup, proposed remedial action and an opportunity to comment and participate in such action.

Section 6. That SMC section 17E.010.120 is amended to read as follows:

17E.010.120 Other Activity Subject to Critical Review – Compliance with Chapter

- A. Excavations, drillings, mining, or other land use activities which expose or enhance exposure of the aquifer to access by surface runoff or spills are subject to such aquifer protection, drainage and dispersion measures as ~~((may be))~~ provided by ~~((regulation))~~, but not limited to SMC 17C.320. Such regulations shall be reasonably related to the purposes, intents, and objectives of this chapter,

~~((but need not relate to a specific critical material or critical material activity, so long as they enhance the general objective of aquifer protection)) whether or not related to a specific critical material or critical material activity, so long as the general requirement and objective of aquifer protection is met..~~

- B. Any project or development affecting surface water drainage where such project involves ~~((more than six thousand square feet of impervious surface is required to submit to critical review))~~ creation or expansion of pollutant generating impervious surface must comply with the City's Stormwater standards and manual as revised.

Section 7. That SMC 17E.010.140 is amended to read as follows:

17E.010.140 Appeals

- A. Any written final order or decision issued pursuant to this chapter may be appealed to the hearings officer by filing a copy of the order and notice of appeal with the hearings officer within twenty days of date of mailing or delivery of the order or decision. Failure to reduce a final order or decision to writing does not affect its validity, but the appeal time is tolled until such is in writing and deposited for mailing or delivered.
- B. A final order or decision is:
1. a dispositive determination of the critical review officer with respect to any permit, license, or application; or
 2. an order of the critical review officer which deals with affected land or premises.
- C. The effect of any order or decision, and the obligation to comply, is not stayed pending an appeal unless so ordered by the critical review officer or the hearings officer, upon such conditions as the order may impose.
- D. These appeals procedures are not intended to replace otherwise applicable procedures for any specific order or action, but govern in the absence of another available method or where deemed ~~((convenient))~~ appropriate and necessary by the critical review officer.

Section 8. That SMC section 17E.010.150 is amended to read as follows:

17E.010.150 Regulations

- A. The ((~~manager of engineering services~~)) division director of public works and utilities is authorized to adopt and promulgate regulations to enforce the provisions of this chapter. Unless declared immediately effective because of emergent circumstances, regulations are effective thirty days after promulgation.
- B. Except as otherwise provided, promulgation occurs by publication in the Official Gazette of the City of Spokane or in the critical materials handbook. Amendments or changes are accomplished in the same way.

ADOPTED BY THE CITY COUNCIL ON DECEMBER 03, 2007.

Alexander J. Shogren Jr.
Council President

Mary B. Verner (12-07-07)
Mayor, Mary B. Verner (Date)

Attest:

Leri Roffe
City Clerk

RECEIVED
12-10-07
CITY CLERK'S OFFICE
SPOKANE, WA

Approved as to form:

Michael J. Puro
Assistant City Attorney



01-08-08

EFFECTIVE DATE

Bab111507

RECEIVED

NOV 14 2007

AgSht01-18-2006

AGENDA SHEET FOR COUNCIL MEETING OF: November 26, 2007

CITY CLERK'S OFFICE
SPOKANE, WASubmitting Dept.
Development IncentivesContact Person/Phone No.
Melissa Eadie X6069Council Sponsor
Councilman French**ADMINISTRATIVE SESSION**

- ☐ Contract
- ☐ Report
- ☐ Claims

LEGISLATIVE SESSION

- ☐ Emergency Ord
- ☐ Resolution
- ☐ Final Reading Ord
- ☒ First Reading Ord
- ☐ Special Consideration
- ☐ Hearing

CITY PRIORITY

- ☐ Communications
- ☐ Economic Development
- ☒ Growth Management
- ☐ Human Services
- ☐ Neighborhoods
- ☐ Public Safety
- ☐ Quality Service Delivery
- ☐ Racial Equity/Cultural Diversity
- ☐ Rebuild/Maintain Infrastructure

CLERK'S FILE

RENEWS

CROSS REF

ENG

BID

REQUISITION

STANDING COMMITTEES

(Date of Notification)

- ☐ Finance
- ☐ Neighborhoods
- ☐ Planning/Community & Econ Dev
- ☐ Public Safety
- ☐ Public Works

Neighborhood/Commission/Committee Notified:

Community Assembly, Plan Commission

Action Taken: Plan Commission: Recommended for approval

AGENDA**WORDING:**

(If contract, include the term.)

An ordinance relating to fish and wildlife conservation areas; repealing SMC sections 11.19.2562, 11.19.2564, 11.19.2566, and 11.19.2568; and adopting a new chapter 17E.020 to division E of title 17 of the Spokane Municipal Code.

BACKGROUND:

See Attached.

(Attach additional sheet if necessary)

RECOMMENDATION: Approve**Fiscal Impact:** N/A**Budget Account:** o N/A☐ Expenditure: \$

#

☐ Revenue: \$

#

☒ Budget Neutral**ATTACHMENTS:** Include in Packets:

Final Draft Ordinance, Summary of Changes, Best Available Science Review, Cover Letter, Plan Commission Findings and Conclusions, Priority Habitat and Species Map.

On file for Review in Office of City Clerk:

SIGNATURES:

Department Head

Division Director

Finance

Legal

Deputy Mayor for Mayor

Council President

DISTRIBUTION:

Planning – K Pelton

Planning – P Hall

Development Incentives – M
Eadie

COUNCIL ACTION:

* See Council Action Memorandum

PASSED BY dated 12/14/07
SPOKANE CITY COUNCIL:

FIRST READING OF THE
ABOVE ORDINANCE WAS HELD ON
November 26, 2007
AND FURTHER ACTION WAS DEFERRED
CITY CLERK

DEC 03 2007
CITY CLERK

C 34147

SHAPING SPOKANE VOLUME III, APPENDIX G
AGENDA SHEET FOR COUNCIL MEETING OF: November 26, 2007



Submitting Dept.
 Development Incentives

Contact Person/Phone No.
 Melissa Eadie X6069

Council Sponsor
 Councilman French

ADMINISTRATIVE SESSION

- ☐ Contract
- ☐ Report
- ☐ Claims

LEGISLATIVE SESSION

- ☐ Emergency Ord
- ☐ Resolution
- ☐ Final Reading Ord
- ☒ First Reading Ord
- ☐ Special Consideration
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CITY PRIORITY

- ☐ Communications
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- ☐ Quality Service Delivery
- ☐ Racial Equity/Cultural Diversity
- ☐ Rebuild/Maintain Infrastructure

CLERK'S FILE _____

RENEWS _____

CROSS REF _____

ENG _____

BID _____

REQUISITION _____

STANDING COMMITTEES

(Date of Notification)

- ☐ Finance _____
- ☐ Neighborhoods _____
- ☐ Planning/Community & Econ Dev _____
- ☐ Public Safety _____
- ☐ Public Works _____

Neighborhood/Commission/Committee Notified:
Community Assembly, Plan Commission
 Action Taken: Plan Commission: Recommended
for approval

BACKGROUND:

(Attach additional sheet if necessary)

The GMA identifies five Critical Areas that must be identified, designated, and protected (RCW 36.70A.030): Wetlands, areas with a critical recharging effect on aquifers used for potable water, frequently flooded areas, geologically hazardous areas, and fish and wildlife habitat conservation areas. In 2002 the GMA was amended to require jurisdictions to take legislative action to review and, if needed, revise their comprehensive plans and development regulations to ensure the plans and regulations comply with the requirements of the act according to a seven-year cycle. The City of Spokane is required to take legislative action by December 1, 2007. In addition, GMA requires that Best Available Science be included in the review of critical areas regulations (RCW 36.70A.172). The public participation process approved by Council in April 2007 was followed, and Best Available Science included in the review that results in the proposed amendments.



CITY PLAN COMMISSION
808 W. SPOKANE FALLS BLVD.
SPOKANE, WASHINGTON 99201-3329
(509) 625-6060
FAX (509) 625-6013

November 15, 2007

RECEIVED
NOV 16 2007

CITY CLERK'S OFFICE
SPOKANE, WA

City Council President Joe Shogan and City Council Members
808 W. Spokane Falls Blvd.
6th Floor City Hall
Spokane, WA 99201

Re: Critical Areas Update – Final Draft Ordinances for Adoption by City Council.

Dear City Council President Joe Shogan and City Council Members:

The Plan Commission has completed its review of the 2007 Critical Area Ordinances Update and forwards the proposed amendments to the City Council. The review and update process followed the public participation process approved by Council in April 2007 along with seven workshops covering the five ordinances. The review included recommended changes to other code sections implementing the critical area regulation amendments. The Plan Commission hearing was held October 24, 2007. After receiving oral and written testimony, the Plan Commission completed deliberations on November 14, 2007. The proposed amendments to these ordinances are forwarded to you with the unanimous approval of the Plan Commission

The early, continuous, and informed participation of citizens in planning processes is a goal and requirement of the Growth Management Act (GMA) (RCW 36.70A.020, .035 and .140). Critical Area identification, designation, and protection are required by GMA and include Geologically Hazardous, Fish and Wildlife Habitat Conservation, Critical Aquifer Recharge, Frequently Flooded, and Wetland Areas. The Plan Commission recognizes that efforts to inform and engage the public, local experts, and state agencies contributed to the positive dialogue and comments during the hearing process.

The Plan Commission also takes this opportunity to note that a recurring theme of the review and update was the administration and implementation of the Critical Area Ordinances (CAO). Many questions were asked of staff regarding public education, departmental processes, and enforcement of the codes protecting critical areas, lives, and public and private property. It was clear to the Plan Commission that updating the regulations would likely be one of several steps in carrying out the intent of the Growth Management Act for critical areas.

The Plan Commission recommends approval of the amendments to the Spokane Municipal Code at 17E.010 Protection of Aquifer Recharge Areas, 17E.020 Spokane Fish and Wildlife Habitat Conservation Areas, 17E.030 Floodplain Management, 17E.040 Spokane Geologically Hazardous Areas, 17E.070 Spokane Wetlands Protection, and 17A.020 Definitions.

Sincerely,

Michael Ekins
President, City Plan Commission

Attachments: Findings and Conclusions

SPOKANE PLAN COMMISSION FINDINGS AND CONCLUSIONS***Development Regulation Amendments*****Critical Area Ordinances**

Spokane Municipal Code 17E.010 Aquifer Protection, 17E.020 Fish and Wildlife Habitat Conservation Areas, 17E.030 Floodplain Management, 17E.040 Geological Hazards, 17E.070 Wetlands Protection

November 14, 2007

The City Plan Commission recommends adoption of ordinances amending Spokane Municipal Code (SMC) Chapter 17E.010 relating to protection of aquifer recharge areas and SMC 17E.030 relating to frequently flooded areas, and repealing certain SMC sections and adopting a new Chapter 17E.020 relating to protection of fish and wildlife conservation areas, adopting a new Chapter 17E.040 relating to geologically hazardous areas, and adopting a new chapter 17E.070 relating to protection of wetlands. Hereinafter, the foregoing ordinances will be collectively referred to as the "Critical Areas Ordinances". The Plan Commission recommends adoption of the ordinance amending SMC Chapter 17A.020 relating to definitions for the Unified Development Code.

In making this recommendation, the Commission makes the following findings and conclusions:

FINDINGS:

1. The Washington State Legislature enacted the Growth Management Act (GMA) in 1990. GMA requires cities to adopt development regulations that protect critical areas that are required to be designated under RCW 36.70A.170.
2. GMA also requires cities to periodically review and update development regulations protecting critical areas, and establishes December 1, 2007 as a deadline by which the City of Spokane is required to take action updating its critical area protection ordinances.
3. Critical areas that must be designated under GMA include wetlands, areas with a critical recharging effect on aquifers used for potable water, frequently flooded areas, geologically hazardous areas, and fish and wildlife habitat conservation areas ("Critical Areas").
4. The City Council adopted the Critical Areas Report in 1994. The Report documented the classification, designation, and regulation of wetlands, frequently flooded areas and aquifer recharge areas through the existence of previously adopted ordinances. The Report also classified, designated and proposed a regulation scheme for fish and wildlife habitat conservation areas and geologically hazardous areas.

5. The City of Spokane adopted a Comprehensive Plan in May of 2001 that complies with the requirements of the Growth Management Act, including designated Critical Areas and providing policy support for the protection of Critical Areas in Chapter 9, Natural Environments.
6. The Critical Area Updates referenced herein above (Critical Area Ordinances, Division E Environmental Standards) are consistent with the Comprehensive Plan, and were developed in accordance with an adopted public participation process including an Aquifer Protection and Wetlands Review Group.
7. The proposed amendments to SMC Chapter 17A.020 Definitions are necessary to provide clarity for the public and administrators of specialized terminology associated with the Critical Area Ordinances.
8. Development may result in cumulative impacts to those functions and values of Critical Areas that contribute to and are necessary for a healthy natural environment and perceived quality of life.
9. The development of residences, businesses, shopping areas and other structures, and the clearing of land for accommodation of livestock and for such development all have the potential of adversely and significantly impacting the functions and values of Critical Areas.
10. The unwise development of resource lands or areas susceptible to natural hazards may lead to inefficient use of limited public resources, jeopardize environmental resource functions and values, subject persons and property to unsafe conditions, and affect the perceived quality of life.
11. It is more costly to remedy the loss of Critical Area functions and values than to conserve and protect them from loss or degradation.
12. In determining what Critical Areas are to be afforded a particular degree of protection, the City of Spokane has evaluated a wide range of the best available science with respect to the Critical Areas to make informed decisions that meet the intent of the Growth Management Act and that are also reflective of local needs.
13. The sources of this best available science that were evaluated and included in Critical Areas Ordinances are listed below:
 - **Aquifer Recharge Areas:** General Policies U.S. Code Title 42- The Public Health and Welfare, Chapter 82- Solid Waste Disposal, Subchapter IX- Regulation of Underground Storage Tanks, Spokane Aquifer Water Quality Management Plan, Spokane County, Washington "208" Program, County Engineers Office & The Spokane Regional Planning Conference, Critical Aquifer Recharge Areas-Guidance Document, Washington State Department of Ecology, Washington's Source Water Assessment Program, Washington State Department of Health, Office of Drinking

Water, Washington State Department of Health, Division of Environmental Health, Stormwater Management Manual for Eastern Washington, Washington State Department of Ecology, Water Quality Program, International Fire Code, Spokane Aquifer Joint Board (SAJB) and Aquifer Protection Council 2007 Wellhead Protection Update, Bi-State Spokane-Rathdrum Aquifer Study, City of Spokane Environmental Programs, Washington State Department of Ecology.

- **Fish & Wildlife Habitat Conservation Areas:** Washington State Forest Practices Rules, Washington State Department of Natural Resources, stream typing, timber harvest and riparian zones, Habitat, and Priority habitat and Species Washington State Department of Fish and Wildlife, Habitat Protection Toolkit, Washington Environmental Council, Streamnet Pacific Northwest Interactive Mapper.
- **Frequently Flooded Areas:** Yakima County's Review of Best Available Science For Inclusion in Critical Areas Ordinance Update, October 2006, King County Best Available Science, Volume 1, Review of Science Literature, Thurston County, Flood and Channel Migration Hazard Areas, Department of Ecology – Floods Section, Department of Homeland Security (FEMA).
- **Geologically Hazardous Areas:** Dr Richard Orndorff, EWU consulted for review of this ordinance and mapping of geohazards in the City of Spokane, U.S. Department of Agriculture Natural resources Conservation Service.
- **Wetlands:** Wetlands in Washington State, Volume 1: A Synthesis of the Science, Wetlands in Washington State, Volume 2: Guidance for Protecting and Managing Wetlands , Washington State Wetland Rating System for Eastern Washington, Wetland Mitigation in Washington State Part 1: Agency Policies and Guidance, Wetland Mitigation in Washington State Part 1: Agency Policies and Guidance, Dr. Robert Quinn, EWU, Dr. Mike Folsom, EWU, Larry Dawes, qualified wetland professionals with the City of Spokane, Jeremy Sikes, Dept of Ecology, wetlands professional, City of Spokane Developer Services staff Kris Becker, PE.

14. Protection standards for one Critical Area often provide protection for one or more other Critical Areas.

15. Critical Areas may also be protected by other actions by the City of Spokane, such as stormwater management standards, critical area restoration, and public education; and from other regulations, such as the Forest Practices Act, the Shoreline Management Act, and the State Environmental Policy Act.

- Forest Practices Act
- Municipal Water Law
- Shoreline Management Act
 - Chapter 11.15 SMC Shoreline Master Program
- State Environmental Policy Act (SEPA)
- Division D Citywide Standards SMC

- Concurrency Certification, Stormwater Facilities Stormwater Facilities
- Division E Environmental Standards SMC
 - Aquifer Protection, Fish & Wildlife Conservation, Floodplain Management, SEPA, Wetland
- Division G Administration and Procedures SMC
 - Building and Construction Permits, Land Use Application Procedures, Planned Unit Developments, Subdivisions
- Division I Enforcement
- Chapter 1 SMC
 - General Provisions, Civil Infraction System
- Chapter 13 SMC Public Utilities and Services
- Water Stewardship Program

16. Aquifer Recharge Areas: WAC 365-190-080 defines well head protection areas, sole source aquifers, special protection areas, and other areas that are susceptible or vulnerable to ground water contamination as areas with a critical recharging effect on aquifers used for potable water (also referred to as critical aquifer recharge areas), the City of Spokane's drinking water comes from groundwater supplies, once ground water is contaminated it is difficult, costly, and sometimes impossible to clean up, preventing groundwater contamination is necessary to avoid exorbitant costs, hardships, and potential physical harm to people, *Guidance Document for Establishment of Critical Aquifer Recharge Area Ordinances*, by the Department of Ecology, 2000, includes scientific recommendations for protecting groundwater, including limiting certain uses and the intensity of development in critical aquifer recharge areas, and potable water is an essential life-sustaining element.

17. Fish and Wildlife Habitat Conservation Areas: Fish and wildlife habitat conservation areas perform many important physical and biological functions that benefit the City of Spokane and its residents, including but not limited to: maintaining species diversity and genetic diversity; providing opportunities for food, cover, nesting, breeding and movement for fish and wildlife; serving as areas for recreation, education and scientific study and aesthetic appreciation; helping to maintain air and water quality; controlling erosion; and providing neighborhood separation and visual diversity within urban areas, wetlands and streams are environmentally sensitive and serve numerous natural functions and values. These functions include wildlife and fisheries habitat, water quality protection, flood protection, shoreline stabilization, stream flow, and ground water recharge and discharge. In many situations these functions cannot be adequately replicated or replaced, the scientific literature supports in the inclusion of protective buffers from streams to provide sediment control, nutrient inputs to downstream waters, large woody debris, and other functions important to riparian areas, the Washington Department of Fish and Wildlife has prepared management recommendations for the preservation of priority habitat and species, which are based on the best available science, and include, in some instances, recommended protective buffer distances, the Department of Natural Resources has classified watercourses according to two stream-typing systems

based on channel width, fish use, and perennial or intermittent status and WAC 365-190-080(5) grants [the City] the flexibility to make decisions in the context of local circumstances, and specifically excuses local jurisdictions from being required to protect "all individuals of all species at all time."

18. **Frequently Flooded Areas:** Flood hazard areas are subject to periodic inundation that results in loss of life and property, health, and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare, these flood losses are caused by development in areas prone to inundation that increase flood heights and velocities, and when inadequately anchored, damage uses in other areas. Uses that are inadequately floodproofed, elevated, or otherwise protected from flood damage also contribute to flood loss, floodplain and stream connectivity are major elements in maintaining healthy riparian habitat and off-channel habitats for the survival of fish species and conveyance of floodwaters. If river, floodplains and other systems are not viewed holistically as biological, geomorphological units, this can lead to serious degradation of habitat and increase flood hazards, which, in turn, can contribute to listing of various fish species as threatened or endangered and result in extraordinary public expenditures for flood protection and relief, and frequently flooded areas, including the 100-year floodplain and the floodway, are commonly mapped on flood insurance maps, often known as Flood Insurance Rate Maps, or FIRMs.
19. **Geologically Hazardous Areas:** Geologically hazardous areas are subject to periodic geological events that results in loss of life and property, health, and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare, geologic hazards may be exacerbated by development and human activity in sensitive areas, and impacts resulting from geologic hazards may be reduced by limiting development and human activity within or adjacent to the geologic hazard, and some geologic hazards may be intensified during periods of consistent or heavy rainfall that results in ground saturation or surface water drainage flows.
20. **Wetlands:** Wetlands and streams are environmentally sensitive and serve numerous natural functions and values. These functions include wildlife and fisheries habitat, water quality protection, flood protection, shoreline stabilization, stream flow, and ground water recharge and discharge. In many situations these functions cannot be adequately replicated or replaced, the scientific literature supports in the inclusion of protective buffers from wetlands to provide sediment control and nutrient inputs to wetlands, and to protect important wetland functions, wetlands are identified and rated according to the *Washington State Wetland Identification and Delineation Manual*, and *Washington State Wetland Rating System* (Eastern and Western Washington), prepared by the Department of Ecology, the scientific literature supports protective buffers ranging from 25 to 300 feet of relatively intact native vegetation to adequately protect wetland functions and values, appropriate wetland mitigation ratios – ratios of areas of

wetland replacement and enhancement to that altered or destroyed – are established in *Wetland Mitigation Replacement Ratios: Defining Equivalency*, published by the Department of Ecology, 1992.

21. A SEPA Environmental Checklist was completed and a Determination of Non-Significance issued, with notice published in the Spokesman-Review on October 5, 2007.
22. An Open House was held on October 11, 2007. Notice of the Open House was mailed to property owners with vacant and or redevelopable land in potential Critical Areas. Notice was also published in the Spokesman-Review.
23. Notice of City of Spokane Plan Commission Public Hearing on the amendments to five Critical Areas Ordinances was published in the Spokesman-Review on October 15, 2007.
24. The Plan Commission held a public hearing and took testimony on the Critical Areas Ordinances on October 24.
25. Comments submitted to the written record from Washington Department of Fish & Wildlife, Futurewise, and Avista Corporation were addressed individually by staff and the Plan Commission. Response to comments resulted in the addition of priority species to 17E.020 per WDFW, and a structural setback from a critical area buffer to 17E.020 and 17E.070 based on BAS protection of buffers as a Best Management Practice (BMP) as commented by WDFW, Futurewise, and Dept. of Ecology. All other comments and responses are recorded as addressed by the regulations, required by BAS, or requirements of other regulatory agencies.
26. The Plan Commission completed deliberations on 17E.010, 17E.030, and 17E.040 SMC on November 6, 2007. The Plan Commission completed deliberations on 17E.020 and 17E.070 SMC on November 14, 2007. The Plan Commission recommends all five Critical Area Ordinance amendments go forward to the City Council with changes as deliberated.
27. The U.S. Constitution prohibits the taking of private property without just compensation.

CONCLUSIONS:

1. The review and subsequent amendments to Aquifer Protection, Fish and Wildlife Habitat conservation Areas, Floodplain Management, Geologically Hazardous Areas, and Wetlands Protection regulations will promote the protection of the City's Critical Areas, as required by the Growth Management Act.
2. Working with state agencies, consulting with other jurisdictions, consulting with qualified local scientific experts, and researching the latest reports and studies, the City has incorporated the "best available science" into the amendments of

these ordinances. These ordinances should be updated as new and better science is developed.

3. The environmental review and determination for the proposed amendments to the regulations fulfilled the requirements and intent of the Spokane Environmental Ordinance and the State Environmental Policy Act.
4. Adoption of these amendments is of public necessity; will benefit the general welfare of the community; constitutes good planning practices; and will not be unduly detrimental to properties within critical areas.
5. Mechanisms to ensure opportunity for public input into the planning process fulfilled legal requirements and the intent and policies of the Plan Commission.
6. The City's Critical Area Ordinances are supported by maps showing designated Critical Areas. It is recognized, however, that some Critical Areas may not be mapped. Mapping shall be for informational purposes only, and the criteria for identification of Critical Areas in the regulations shall prevail.
7. Adoption of these changes will officially amend Chapters 17A.020, 17E.010 and 17E.030 of the SMC, and will repeal certain chapters of the SMC and replace those chapters with new Chapters 17E.020, 17E.040, and 17E.070 SMC.

These findings and conclusions were approved on November 14, 2007

Michael Ekins, President
Spokane Plan Commission

City Council Hearing – Critical Areas Update

November 26, 2007

Fish & Wildlife - Summary of Substantive Changes

Division E Environmental SMC 17E.020

Repeal of 11.19.2560, move to Title 17, Unified Development Code

Section	Change
Definitions	Moved definitions to 17A.020 SMC Definitions as part of the Unified Development Code.
17E.020.010	Added Comprehensive Plan, Shoreline, and protection of function and values.
17E.020.020	Applicability Incorporated mitigation sequencing and Best Available Science requirement. No net loss of function and values permitted, actions must result in equivalent or greater function of the fish and wildlife habitat area.
17E.020.030 (A) Table 17E.020-1	Updated the priority habitats and species listed in the Washington State Department of Fish and Wildlife Priority Habitat and Species (PHS) – used table formatting. The additions include a description of each habitat and some of the general characteristics.
17E.020.040	Identification and Mapping – Maps are for informational purposes only; criteria shall prevail.
17E.020.050 Table 17E.020-2, (C)(f) Table 17E.020-4, (C)(h)(iii)	Regulated Activities - Added a Critical Areas Checklist requirement for proposals falling within a potential Fish & Wildlife Habitat Conservation Area (A)(3) Added language that prohibits any permit or authorization without first complying with all the requirements of this regulation, including clearing and grading of less than 50 cubic yards. (B) Performance Standards Added mitigation sequencing statement. Table 17E.020-2 Added new DNR stream typing. Table 17E.020-3 and Table 17E.020-4 Added table format for zone segment locations, Riparian Habitat Widths and restrictions. Re-structured buffer sections for clarity, added channel migration zone and consistency with Shoreline Master Program setbacks.
17E.020.070	Exemptions – Added requirements for emergency activities, clarity for activities such as mowing and removing vegetation in a buffer.
17E.020.080	Application Submittal – Added pre-development conference. Critical areas Checklist. Added application requirements, Director's discretion allowed for these requirements.
17E.020.090 (D)	Habitat Management Plans – Added Structural Setback from Buffers.
17E.020.100	Bonding – Combined sections requiring bonding for habitat management plans or any mitigation. Required bonding for maintenance in addition to performance of mitigation.

17E.020.110	Posting, covenants and recording – Added flagging of buffers during construction. Recording buffers and permanent conditions on plat, title. Director may require placement of permanent markers for buffers on site.
17E.020.120	Incentives and Stewardship – Added new language describing on-site density transfer, removed transfer of development rights, added stewardship options and resources.
17E.020.130-200	Administration and Violations – Restructured enforcement and penalties section. More explicit and stronger language for procedures, actions, and penalties.

ORDINANCE NO. C -34147

An ordinance relating to fish and wildlife conservation areas; repealing SMC sections 11.19.2562, 11.19.2564, 11.19.2566, 11.19.2568; and adopting a new chapter 17E.020 to division E of title 17 of the Spokane Municipal Code.

Whereas, the Growth Management Act (GMA) requires cities to adopt development regulations that protect critical areas that are required to be designated under RCW 36.70A.170 ("Critical Area Ordinances"); and

Whereas, GMA requires cities to periodically review and update their Critical Area Ordinances and establishes December 1, 2007 as a deadline by which the City of Spokane is required to take action updating its Critical Area Ordinances ("Critical Area Updates"); and

Whereas, critical areas that must be designated under GMA include wetlands, areas with a critical recharging effect on aquifers used for potable water, frequently flooded areas, geologically hazardous areas, and fish and wildlife habitat conservation areas ("Critical Areas"); and

Whereas, in preparing its Critical Area Updates, and as outlined in the findings and conclusions of the Plan Commissioner, dated November 14, 2007 ("Plan Commission Findings and Recommendation"), the City has worked with state agencies, consulted with other jurisdiction, consulted with qualified local scientific experts, and researched the latest reports and studies and has included the best available science, consistent with local needs, in developing the current updates to its Critical Area Ordinances to protect the functions and values of critical areas, as required by GMA; and

Whereas, as set forth in more detail in the Plan Commission Findings and Recommendation, fish and wildlife habitat conservation areas perform many important physical and biological functions that benefit the City of Spokane and its residents, including but not limited to: maintaining species diversity and genetic diversity; providing opportunities for food, cover, nesting, breeding and movement for fish and wildlife; serving as areas for recreation, education and scientific study and aesthetic appreciation; helping to maintain air and water quality; controlling erosion; and providing neighborhood separation and visual diversity within urban areas, wetlands and streams are environmentally sensitive and serve numerous natural functions and values. These functions include wildlife and fisheries habitat, water quality protection, flood protection, shoreline stabilization, stream flow, and ground water recharge and discharge. In many situations these functions cannot be adequately replicated or replaced, the scientific literature supports in the inclusion of protective buffers from streams to provide sediment control, nutrient inputs to downstream waters, large woody debris, and other functions important to riparian areas, the Washington Department of Fish and Wildlife

As Amended by Council

12-03-07

has prepared management recommendations for the preservation of priority habitat and species, which are based on the best available science, and include, in some instances, recommended protective buffer distances, the Department of Natural Resources has classified watercourses according to two stream-typing systems based on channel width, fish use, and perennial or intermittent status and WAC 365-190-080(5) grants the City of Spokane the flexibility to make decisions in the context of local circumstances, and specifically excuses local jurisdictions from being required to protect "all individuals of all species at all time"; and

Whereas, a SEPA Environmental Checklist was completed and a Determination of Non-Significance issued, with notice published in the Spokesman-Review on October 5, 2007; and

Whereas, an Open House was held on October 11, 2007. Notice of the Open House was mailed to property owners with vacant and or redevelopable land in potential Critical Areas. Notice was also published in the Spokesman-Review; and

Whereas, notice of City of Spokane Plan Commission Public Hearing on Critical Areas Updates was published in the Spokesman-Review on October 15, 2007; and

Whereas, the Plan Commission held a public hearing and took testimony on the Critical Area Updates on October 24 and completed deliberations November 14, 2007; and

Whereas, the environmental review and determination for the Critical Area Updates fulfilled the requirements and intent of the Spokane Environmental Ordinance and the State Environmental Policy Act; and

Whereas, adoption of the Critical Area Updates is of public necessity; will protect public health, safety, and welfare; constitutes good planning practices; and will not be unduly detrimental to properties within critical areas; and

Whereas, mechanisms to ensure opportunity for public input into the planning process fulfilled legal requirements and the intent and policies of the Plan Commission;
-- Now, Therefore,

The City of Spokane does ordain:

Section 1. That SMC section 11.19.2562 is repealed.

Section 2. That SMC section 11.19.2564 is repealed.

Section 3. That SMC section 11.19.2566 is repealed.

Section 4. That SMC section 11.19.2568 is repealed.

Section 5. That the findings and conclusions of the Plan Commission, dated November 14, 2007, and the preambles to this Ordinance are adopted as the City Council's findings of fact in support of this Ordinance.

Section 6. That there is adopted a new chapter 17E.020 to division E of title 17 to read as follows:

Chapter 17E.020
Fish and Wildlife Habitat Conservation Areas

Sections:

17E.020.010	Title and Purpose
17E.020.020	Applicability
17E.020.030	Fish and Wildlife Habitat Conservation Areas
17E.020.040	Identification, Designation, and Mapping of Critical Areas
17E.020.050	Regulated Activities
17E.020.060	Reasonable Use Exception
17E.020.070	Exemptions
17E.020.080	Application Submittal Requirements
17E.020.090	Habitat Management Plans
17E.020.100	Bonding or other Financial Guarantees
17E.020.110	Posting, covenants, and recording conditions
17E.020.120	Incentives and Stewardship Options
17E.020.130	Administration
17E.020.140	Violations
17E.020.150	Authority to enforce

17E.020.010 Title and Purpose.

- A. This chapter shall be known and may be cited as the "Spokane Fish and Wildlife Habitat Conservation Area Code."
- B. This chapter is based on and implements the City of Spokane Comprehensive Plan and shoreline master program, as amended from time to time. The purpose of this chapter is to protect the public health, safety and welfare by providing protection for environmentally sensitive areas and their functions and values, and by preserving and protecting fish and wildlife habitat conservation areas through the regulation of development and other activities consistent within fish and wildlife habitat conservation areas, and not to create or otherwise establish or designate any particular person, or class, or group of persons who will or should be especially protected or assisted by the terms or provisions of this chapter. The provisions of this chapter shall be construed liberally to carry out its purpose effectively and if any provisions of this chapter conflict with other regulations, ordinances, or other authorities, that which provides more protection to fish and wildlife habitat conservation areas and associated buffers shall apply.

17E.020.020 Applicability.

- A. The requirements of this chapter apply to all activities and development occurring in a fish and wildlife habitat conservation area as defined in SMC 17E.020.030(A) and this chapter. All areas within the City meeting the definition of a fish and wildlife habitat conservation area, regardless of any formal identification, are hereby designated critical areas and are subject to the provisions of this chapter. Property located in a fish and wildlife habitat conservation area is subject to both zoning classification regulations and the additional requirements imposed under this chapter. In any case where there are differences between the provisions of the underlying zone and this chapter, the provisions of this chapter shall apply.
- B. Any action taken pursuant to this chapter shall result in equivalent or greater functions and values of the fish and wildlife habitat conservation area and associated buffers impacted by the proposed action, as determined by the best available science (BAS). All actions and developments shall be designed and constructed in accordance with mitigation sequencing as defined in chapter 17A.020 SMC to avoid, minimize, and restore all adverse impacts. Applicants must first demonstrate an inability to avoid or reduce impacts, before restoration and compensation of impacts will be allowed. No activity or use shall be allowed that results in a net loss of the functions or values of fish and wildlife habitat conservation area and associated buffers.
- C. Reports, habitat management plans and decisions to alter fish and wildlife habitat conservation areas shall rely on the best available science to protect the functions and values and must give special consideration to conservation or protection measures necessary to preserve or enhance anadromous fish and their habitat. Best available science is that scientific information applicable to fish and wildlife habitat prepared by local, state, or federal natural resource agencies, a qualified scientific professional, or team of qualified scientific professionals that is consistent with criteria established in WAC 365-195-900 through WAC 365-195-925.

17E.020.030 Fish and Wildlife Habitat Conservation Areas.

- A. Fish and Wildlife Habitat Conservation Areas include the following:
 - 1. Areas with which priority species (as determined by the Washington Department of Fish and Wildlife) have primary association. Priority species are wildlife species of concern due to their population status and their sensitivity to habitat alteration.
 - 2. Priority habitats as identified by the Washington Department of Fish and Wildlife (WDFW). Priority habitats are areas with one or more of the following attributes: Comparatively high wildlife density, high wildlife species richness, significant wildlife species richness, important wildlife

breeding habitat, significant wildlife seasonal ranges, important movement corridors for wildlife, limited availability, and/or vulnerability.

3. Habitats or species of local importance identified by WDFW.
4. Habitats or species of local importance. In order to nominate "Habitats/Species of Local Importance" as candidates for designation within the category of Fish and Wildlife Habitat Conservation Areas, an individual or organization must do the following:
 - a. demonstrate a need for special consideration based on declining population, sensitivity to habitat manipulation, or commercial, game or other special value, such as public appeal;
 - b. propose relevant management strategies considered effective and within the scope of this chapter; and
 - c. provide species/habitat location(s) on a map (scale 1:24,000).

Submitted proposals will be reviewed by the director and forwarded to the State Departments of Fish and Wildlife, Natural Resources, Ecology, and/or other local and state agencies or experts for comment and recommendation regarding accuracy of data and effectiveness of proposed management strategies. The City of Spokane Plan Commission will hold a public hearing for proposals found to be complete, accurate, potentially effective, and within the scope of this chapter. Approved nominations will become designated "Habitats/Species of Local Importance" and be subject to the provisions of this chapter. Approval of nominations for local habitat and species designation are subject to the City's discretion. Appeals of the designation of local habitats and species shall be reviewed as to whether the designation decision was arbitrary and capricious. Appeals may be made in accordance with chapter 17G.050 SMC.

5. Naturally occurring ponds less than twenty acres and their submerged aquatic beds that provide fish or wildlife habitat.
 6. Waters of the State.
 7. Lakes, ponds, streams, and rivers planted with game fish (defined at RCW 77.09.020), including fish planted under the auspices of federal, state, local, or tribal programs, or which support priority fish species as identified by WDFW.
 8. State natural area preserves and natural resource conservation areas.
- B. The City of Spokane includes the following priority habitats and species:

1. **Freshwater Wetlands:** Lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. Wetlands must have one or more of the following attributes: The land supports, at least periodically, predominantly hydrophytic plants; substrate is predominantly undrained hydric soils; and/or the substrate is nonsoil and is saturated with water or covered by shallow water at some time during the growing season of each year.
2. **Fresh Deepwater:** Permanently flooded lands lying below the deepwater boundary of wetlands. Deepwater habitats include environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. The dominant plants are hydrophytes; however, the substrates are considered nonsoil because the water is too deep to support emergent vegetation. These habitats include all underwater structures and features.
3. **Instream:** Instream habitat is defined as the combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and invertebrate resources. Instream habitats support comparatively high fish and wildlife density and species diversity, important fish and wildlife seasonal ranges, limited availability, high vulnerability to habitat alteration, dependent species.
4. **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages (including associated detritic tubes, cracks, and fissures), which occurs under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human. Mine shafts may mimic caves, and those abandoned mine shafts with actual or suspected occurrences of priority species should be treated in a manner similar to caves. A mine is a man-made excavation in the earth usually used to extract minerals.
5. **Riparian:** Riparian habitat is defined as an area that contains elements of both aquatic and terrestrial ecosystems, which mutually influence each other. It is the area where the vegetation, water tables, soils, microclimate, and wildlife inhabitants of terrestrial ecosystems are influenced by perennial or intermittent water, and the biological and physical properties of the adjacent aquatic ecosystems are influenced by adjacent vegetation, nutrient and sediment loading, terrestrial wildlife, and organic debris from the land. Riparian Vegetation includes not only streamside vegetation that is dependent upon presence of water, but also on the upland vegetation that is part of the zone of influence in the riparian area. Riparian habitats have high wildlife density and high species diversity. They serve as important wildlife breeding and seasonal ranges. They are important movement corridors and are highly vulnerable to habitat alteration.

6. Cliffs/Bluffs: Greater than twenty five feet high and below five thousand feet elevation, these areas are significant for wildlife breeding habitat, have limited availability, and support unique assemblages of species.
7. Talus: Homogenous areas of rock rubble ranging in average size from fifteen-one hundredths to two meters (one-half to six and one-half feet), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
8. Old Growth/Mature Forests: Tree stands are highly variable in species composition and structural characteristics due to the influence of fire, climate, and soil. In general, stands will be greater than one hundred fifty years old with ten trees per acre greater than twenty one inches diameter at breast height and one to three snags per acre greater than twelve to fourteen inches in diameter. Downed logs may vary from abundant to absent. Canopies may be single or multilayered. Evidence of human-caused alterations to the stand will be absent or so slight as not to affect the ecosystem structures and functions.
9. Mature forests have stands with average tree diameters exceeding fifty three centimeters (twenty one inches) diameter at breast height; crown cover may be less than one hundred percent; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old growth; eighty to one hundred sixty years old east of the Cascade crest. Old growth and mature forests have high wildlife density and diversity, and constitute important for breeding habitat and seasonal ranges. Old growth and mature forests are limited and declining and have a high vulnerability to habitat alteration.
10. Snags and Logs: Snags and logs occur within a variety of habitat types that support trees. Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of greater than twelve inches in eastern Washington and are greater than six and one-half feet in height. Priority logs are greater than twelve inches in diameter at the largest and greater than twenty feet in length. Abundant snags and logs can be found in old growth and mature forests or unmanaged forests of any age, in damaged, burned, or diseased forests, and in riparian areas. Priority snag and log habitat includes individual snags and/or logs or groups of snags and/or logs of exceptional value to wildlife due to their scarcity or location in a particular landscape. Areas with abundant, well-distributed snags and logs are also considered priority snag and log habitat. Snags and logs support comparatively high fish and wildlife density and species diversity, important fish and wildlife breeding habitat and seasonal ranges and have limited availability, high vulnerability to habitat alteration, and a large number of cavity-dependent species.

11. Aspen Stands: Aspen stands are defined as pure or mixed stands of aspen greater than one acre. Aspen stands support high fish and wildlife species diversity and have limited availability and high vulnerability to habitat alteration.
12. Urban Natural Open Space: A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding. This habitat may also function as a corridor connecting other fish and wildlife habitat conservation areas, especially those that would otherwise be isolated, and/or the open space is an isolated remnant of natural habitat larger than ten acres and is surrounded by urban development. Local consideration may be given to open space areas smaller than ten acres. Urban natural open space has comparatively high wildlife density and diversity, is important as a breeding habitat, and is important as a movement corridor. These areas have limited availability and have a high vulnerability to habitat alteration.
13. Prairies and Steppe: Prairies and steppe habitat is defined a relatively undisturbed areas as indicated by the dominance of native plants where grasses and forbs form the natural climax plant community. Prairies and steppe habitat has relatively high wildlife density and diversity, is important wildlife breeding habitat and is important for seasonal range. This habitat has limited availability, high vulnerability to habitat alteration and supports unique and dependent species.
14. Shrub-Steppe: Small tracts of land less than six hundred forty acres with a habitat type consisting of plant communities with one or more layers of perennial grasses and a conspicuous but discontinuous layer of shrubs. Although smaller in size and possibly more isolated from other tracts of shrub-steppe, these areas are still important to shrub-steppe obligate and other state-listed wildlife species. Shrub-steppe habitat supports comparatively high fish and wildlife density and species diversity, important fish and wildlife breeding habitat and seasonal ranges, are of limited availability, has high vulnerability to habitat alteration, and have unique and dependent species.
15. White-Tailed Deer Winter Range: Winter range is determined by a combination of range factors: elevation, slope, aspect, snow depth, browse quality and quantity, presence of closed canopy mature forests, temperatures, and traditional deer movement patterns. Closed canopies of mature forests along streams are extremely important white-tailed deer habitat.
16. Moose Range: Forested summer range includes stream bottoms and other moist areas inside mature timber stands of one hundred acres or more with seventy percent canopy coverage. Narrow productive zones of understory forage are utilized both summer and winter. These areas

should have little disturbance and escape cover islands. Winter range is determined by a combination of range factors: snow depth, aspect, browse quality and quantity, presence of closed canopy mature forests. Calving sites are characterized by minimally disturbed roadless blocks of mature timber with good forage.

Priority Species	Status
Amphibians	
Columbian Spotted Frog	State Species of Concern
Northern Leopard Frog	Federal Species of Concern, State Endangered Species
Mammals	
Townsend's Big-eared Bat	Federal Species of Concern, State Candidate
Big Brown Bat	Local and state species of concern
Myotis Bat	Local and state species of concern
Moose	Game species
River Otter	Local species of concern
Birds	
Peregrine Falcon	Federal Species of Concern, State Sensitive Species
Bald Eagle	Federal, State Threatened Species
Merlin	State Candidate Species
Vaux's Swift	State Candidate Species
Pileated Woodpecker	State Candidate Species
Black-backed Woodpecker	State Candidate Species
Lewis' Woodpecker	State Candidate Species
White-headed Woodpecker	State Candidate Species
Great Blue Heron	State Monitor
Harlequin Duck	Game and local species of concern
Cavity-nesting Ducks	Game species
Waterfowl concentrations	
Osprey	Federal Migratory Bird Act
Fish	
Rainbow Trout	Game species
Redband Trout	Game species

Note: Definitions for species status are contained in the Washington Department of Fish and Wildlife Management Recommendations for Priority Species and in WAC 232-12, or as amended. The Shoreline Master Program may list additional nominations for species of local concern for protection under this code. That regulation that provides the most protection for priority habitat species shall prevail.

- A. Data sources are available from the City of Spokane and/or WDFW that are used in the mapping of the characteristics for fish and wildlife habitat conservation areas. The existing map sources provide a general level of information and are not intended to pinpoint fish and wildlife habitat conservation areas on individual sites or properties.
- B. In addition, there may be areas not designated on the City of Spokane maps that exhibit the characteristics of fish and wildlife habitat conservation areas. It is the intent of this chapter to require all areas that meet the classification characteristics of fish and wildlife habitat conservation areas to meet the requirements of this section.
- C. The City will maintain a collection of fish and wildlife habitat conservation area inventory maps for purposes of providing information on the general location of fish and wildlife habitat conservation areas. Use of the maps shall be for informational purposes only. The fish and wildlife habitat conservation area maps shall be updated as more accurate information becomes available to aid the public and project reviewers. In any case where maps and criteria conflict, criteria shall prevail.

17E.020.050 Regulated Activities.

No regulated activity shall be undertaken in a fish and wildlife habitat conservation area or associated buffer without first completing a Critical Areas Checklist.

- A. Regulated Uses and Activities in Fish and Wildlife Habitat Conservation Areas.
 - 1. For the purposes of this chapter, the City of Spokane may restrict the regulated uses and activities that lie within a priority habitat, by definition, or within one-quarter mile of a point location (den or nest site) of a priority species through the application of the performance standards contained in SMC 17E.020.050(B).
 - 2. In cases where differences in regulations occur because of overlapping priority habitats or buffer areas, the regulation that provides the greatest degree of protection shall apply.
 - 3. The City shall not approve any permit or otherwise issue any authorization to alter the condition of any land, water, or vegetation, or to construct or alter any structure or improvement in, over, or on a potential fish and wildlife habitat conservation area or associated buffer, without first ensuring compliance with the requirements of this chapter, including, but not limited to, those permits listed at chapter 17G.060 SMC and as follows:
 - a. Water Well Pump House, Wildlife Blind, Nesting Structure, all clearing and grading, including fifty cubic yards or less of earth materials.

Note: Other uses and activities not listed are assumed to be subject to this chapter unless otherwise determined by the director.

B. Performance Standards for Regulated Uses and Activities.

Any action taken pursuant to this chapter shall result in equivalent or greater functions and values of the critical areas associated with the proposed action, as determined by the best available science. All actions and developments shall be designed and constructed in accordance with mitigation sequencing to avoid, minimize, and restore all adverse impacts before restoration and compensation of impacts will be allowed. No activity or use shall be allowed that results in a net loss of the functions or values of critical areas.

1. A habitat management plan (HMP) (as described in SMC 17E.020.090 of this chapter), if required, will be used by the City of Spokane to evaluate the impact of a use or activity on a priority habitat or species and may require mitigating measures to protect fish and wildlife based on the management plan recommendations.
2. In addition to a habitat management plan, when required, the following performance standards apply specifically to riparian habitats:
 - a. Except as otherwise specified, riparian areas shall be retained in their natural condition to provide necessary ecological function. Riparian vegetation in riparian habitat areas shall not be removed, unless vegetation removal is conducted as part of an approved habitat management plan.
 - b. Roads within riparian habitat areas shall be allowed only when there is no alternative route, shall be kept to a minimum, and shall not run parallel to the water body. Crossings, where necessary, shall cross riparian areas at as near right angles as possible. Water crossings shall be designed and installed as to allow passage of fish and wildlife using the stream corridor. If no alternative exists to placement of a roadway within a riparian area, mitigation will be required. Mitigation measures shall be specified in a habitat management plan and may include, but are not limited to:
 - i. Fencing of riparian habitat area to protect remaining vegetation.
 - ii. Enhancement of remaining riparian habitat area through planting of native vegetation.
 - iii. Placement of facilities so as to minimize the impacts. Water crossings must be approved by the Washington State Department of Fish and Wildlife (RCW 77.55.021) for a

Hydraulic Project Approval (HPA) according to WAC 75-20-100 or as amended.

- c. Equestrian/Pedestrian/Bike trails are not permitted within the designated Riparian Habitat Area (RHA) as detailed in subsection (e), unless trail planning is conducted in conjunction with an approved habitat management plan.
- d. Off-road motorized vehicle use in riparian habitat areas is prohibited.
- e. As recommended by the Washington State Department of Fish and Wildlife (WDFW), water type classifications, Riparian Habitat Areas (RHA) widths (except as otherwise permitted by this chapter) within the city limits are described as follows:

Table 17E.020-2

Stream Type Classifications	RHA Widths
Type "S" streams, Shorelines of the State or Shorelines of Statewide Significance	250 feet
Type "F" streams Fish bearing streams 5 to 20 feet bank-fill width	250 feet
Type "F" streams - Fish bearing streams less than 5 feet bank-full width	150 feet
Type "Np" streams Non-Fish Perennial	150 feet
Type "Ns" streams Non-Fish Seasonal	150 feet
Type U streams Unknown	--

- f. Riparian Habitats Widths, as described throughout this chapter, shall be measured from the Ordinary High Water Mark (OHWM). Based on general field inventory and observations of previously or currently developed, denuded or degraded shorelines, the city has developed the following classifications for riparian habitat zone segments for the Spokane River & Latah Creek. These zones reflect patterns of urban development prior to adoption of the Growth Management Act (RCW 36.70A) and may exhibit

significantly compromised riparian habitat. The imposition of BAS recommended Riparian Habitat Areas would not be feasible in these areas. RHA in these areas may be evaluated by a qualified biologist to determine if improvement in function and value has been achieved and, if so, will be protected according to BAS standards.

Table 17E.020-3

SPOKANE RIVER & LATAH CREEK RIPARIAN ZONE SEGMENTS		
Zone Number	Upstream Limit	Downstream Limit
1	Eastern City Limits	Greene Street Bridge
2	Greene Street Bridge	Confluence with Latah Creek
3	Confluence with Latah Creek	T.J. Meenach Bridge
4	T.J. Meenach Bridge	Western City Limit
5	Latah Creek – Inland Empire Bridge	Confluence with Spokane River
6	Latah Creek – Southern City Limits	Inland Empire Bridge
<p>These zones have been designated for the purpose of this chapter and may be modified or superseded, as appropriate, upon completion of site-specific inventory and associated analysis and studies to determine the site-specific riparian habitat and buffer zones.</p>		

Table 17E.020-4

Zone Number	Upstream Limit	Downstream Limit	RHA Width	Restrictions
1	Eastern City Limits	Greene Street Bridge	Outer edge of 100 yr floodplain, the channel migration zone, or 250 ft whichever is	No improvements of any kind or vegetation removal within 250 feet of the OHWM (unless invasive vegetation removal is called for in a HMP) *

			greater	
2 ¹	Greene Street Bridge	Confluence with Latah Creek	Outer edge of 100yr floodplain or 130 ft whichever is greater	No improvements of any kind or vegetation removal within 130 feet of the OHWM (unless invasive vegetation removal is called for in a HMP) *
3	Confluence with Latah Creek	T.J. Meenach Bridge	Outer edge of 100 yr floodplain, the channel migration zone, or 250 ft whichever is greater	No improvements of any kind or vegetation removal within 250 feet of the OHWM (unless invasive vegetation removal is called for in a HMP) *
4	T.J. Meenach Bridge	Western City Limit	Outer edge of 100 yr floodplain, the channel migration zone, or 250 ft whichever is greater	No improvements of any kind or vegetation removal within 250 feet of the OHWM (unless invasive vegetation removal is called for in a HMP) *
5 ¹	Latah Creek - Inland Empire Bridge	Confluence with Spokane River	Outer edge of 100 floodplain or 130 ft whichever is greater	No improvements of any kind or vegetation removal within 130 feet of the OHWM (unless invasive vegetation removal is called for in a

¹ Riparian Segment Zones 2 and 5 shall extend to the outer edge of the 100-year floodplain or consist of the width of 130 feet, whichever is greater, unless it is determined by the Director that an approved Habitat Management Plan shows the site potential tree height (SPTH) to be less than 130 feet. Under this provision no improvements of any kind or vegetation removal (unless invasive vegetation removal is called for in the habitat management plan) will be allowed within 130 feet or the site potential tree height, unless for public health and safety.

				HMP) *
6	Latah Creek - Southern City Limits	Inland Empire Bridge	Outer edge of 100 yr floodplain, the channel migration zone, or 250 ft whichever is greater	No improvements of any kind or vegetation removal within 250 feet of the OHWM (unless invasive vegetation removal is called for in a HMP) *
* Vegetation may be removed if deemed necessary to protect public health and safety.				

- g. Riparian Segment Zones 2 and 5 (Table 17E.020-4) for Spokane River and Latah Creek Riparian Habitat Areas (RHA) shall extend to the outer edge of the one hundred-year floodplain or consist of the width of one hundred thirty feet, whichever is greater, unless it is determined by the director that an approved Habitat Management Plan shows the site potential tree height (SPTH) to be less than one hundred thirty feet. Under this provision no improvements of any kind or vegetation removal (unless invasive vegetation removal is called for in the habitat management plan) will be allowed within one hundred thirty feet or the site potential tree height, unless for public health and safety.
- h. Riparian Segment Zones 1, 3, 4 and 6 (Table 17E.020-4) for Spokane River and Latah Creek Riparian Habitat Areas (RHA) shall extend to the outer edge of the one hundred-year floodplain, the channel migration zone or consist of two hundred fifty feet, whichever is greater. Under this provision no improvements of any kind or vegetation removal (unless invasive vegetation removal is called for in the habitat management plan) will be allowed within two hundred fifty feet of the ordinary high water mark, the one hundred-year floodplain, or the channel migration zone; unless for public health and safety.
- i. The director has the authority to increase the RHA widths, described in subsection B(2)(g&h). This determination shall be supported by the Habitat Management Plan, appropriate

environmental documentation, or as required by the Shoreline Master Program or other regulatory provisions or as amended, whichever is most restrictive, showing that the increased riparian area is related to the protection of fish and/or wildlife using the stream or riparian area.

- j. Development may be permitted in a RHA if the proposed development is on the landward side of an existing and dedicated public street, not including alleys, running parallel to the river or stream. Streets shall not be approved to create developable lots in the RHA under this provision. Development will only be permitted subject to an approved habitat management plan.
- k. Riparian Segment Zone 2 and 5 (Table 17E.020-4) for the Spokane River and Latah Creek RHA may be permitted to be developed, but no closer than the setback prescribed for that particular shoreline of that specific site as described in the City's SMP or as amended, or fifty feet, whichever is greater, and the Director determines that the approved HMP is more beneficial to terrestrial and aquatic habitat than the setback alone, and an approved HMP verifies and confirms the following conditions:
 - i. Historical and previous use of the property and shoreline area have disturbed, denuded, decimated, destroyed or contaminated the natural, native and environmental ecosystems, flora and geology to such a significant degree that there currently exists very minimal quality or value for aquatic or fauna habitat.
 - ii. The proposed development includes a shoreline and ecosystems enhancement plan and program, certified by a qualified biologist or WDFW, that the shoreline and the area between the OHWM and the reduced RHA boundary, will be significantly improved for use as a riparian habitat compared to the existing conditions. Enhancement plans and programs will include, but are not limited to:
 - a) Clean-up and/or removal of trash, foreign debris, noxious or invasive vegetation or toxic materials or soils;
 - b) Stabilization of eroded or unnaturally disturbed river bank with materials that are native to that particular section of shoreline;

- c) Installation and/or reintroduction of sufficient or additional flora that is native to that particular section of shoreline;
 - d) Reduction or elimination of erosion to the riverbank and adverse impacts to riparian ecosystems caused by stormwater run-off from unnatural surfaces;
 - e) The proposed use(s) and/or improvements, outside of the RHA, will create significantly less adverse environmental impacts than the previous or current uses;
 - f) An RHA management and maintenance plan, approved by a qualified biologist or WDFW and guaranteed by the Owner, that the enhanced RHA will be protected and maintained as specified in the HMP.
- I. Riparian Segment Zone 3 (Table 17E.020-4) for the Spokane River and Latah Creek RHA may be permitted to be developed in a RHA, but no closer than the Site Potential Tree Height for that section of shoreline or the setback prescribed for that particular shoreline of that specific site as described in the city's SMP or as amended, or fifty feet, whichever is greater, and the Director determines that the approved HMP is more beneficial to terrestrial and aquatic habitat than the setback alone, and an approved HMP verifies and confirms the following conditions:
- i. Historical and previous use of the property and shoreline area have disturbed, denuded, decimated, destroyed or contaminated the natural, native and environmental ecosystems, flora and geology to such a significant degree that there currently exist very minimal quality or value for aquatic or fauna habitat.
 - ii. The proposed development includes a shoreline and ecosystems enhancement plan and program, certified by a qualified biologist or WDFW, that the shoreline and the area between the OHWM and the reduced RHA boundary, will be significantly improved for use as a riparian habitat compared to the existing conditions. Enhancement plans and programs will include, but are not limited to:
 - a) Clean-up and/or removal of trash, foreign debris, noxious or invasive vegetation or toxic materials or soils;

- b) Stabilization of eroded or unnaturally disturbed river bank with materials that are native to that particular section of shoreline;
 - c) Installation and/or reintroduction of sufficient or additional flora that is native to that particular section of shoreline;
 - d) Reduction or elimination of erosion to the riverbank and adverse impacts to riparian ecosystems caused by stormwater run-off from unnatural surfaces;
 - e) The proposed use(s) and/or improvements, outside of the RHA, will create significantly less adverse environmental impacts than the previous or current uses;
 - f) The proposed use(s) and/or improvements, outside of the RHA, will reclaim property that has been mined and such reclaimed property will be improved by re-creation of areas conducive to wildlife habitat along with development;
 - g) An RHA management and maintenance plan, approved by a qualified biologist or WDFW and guaranteed by the Owner, that the enhanced RHA will be protected and maintained as specified in the HMP.
- m. Latah Creek Riparian Zone Segment 6 may allow buffer averaging if it can be shown through a HMP that the averaging will not negatively affect the riparian habitat. Buffer averaging shall comply with the following criteria:
- i. Averaging shall not allow development any closer than one hundred thirty feet from the OHWM or the Site Potential Tree Height, but in no instance less than fifty feet from the OHWM, as determined for the project area.
 - ii. The area that the buffer is reduced should be those areas already impacted by development. New development using buffer averaging will be clustered within existing development or be developed within the most disturbed portion of the site if there is no existing development as determined through a HMP.

- iii. The area to be increased shall be adjacent to the RHA, on either side of the stream, and suitable for riparian habitat. Measurement of the increased buffer area shall begin two hundred fifty feet from the OHWM.
 - iv. Buffers will only be averaged within individual parcels or along parcels of common ownership that are immediately adjacent. Multiple parcels cannot be combined into a single parcel.
 - v. Buffer averaging will require a habitat management plan prepared by a qualified biologist that is subsequently reviewed by WDFW staff. Enhancement and/or preservation plans will include, but are not limited to:
 - a) Clean up and/or removal of trash, foreign debris, noxious or invasive vegetation or toxic materials.
 - b) Stabilization of eroded or unnaturally disturbed riverbank with materials that are native to that particular section of the shoreline.
 - c) Installation and/or reintroduction of sufficient native flora as to significantly enhance the function of that stretch of streamside habitat for wildlife use.
3. Wetland habitat performance standards shall be according to the provisions of the Spokane Wetlands Protections Code (Chapter 17E.070 SMC).

All development proposals shall follow the Bald Eagle Protection Rules (RCW 77.12.655 and WAC 232-12-292), or as amended, when the proposal is likely to have a direct impact on the habitat of the bald eagle.

17E.020.060 Reasonable Use Exception

- A. When the director determines that the following criteria are met, development activity that would otherwise be prohibited under this chapter may be allowed, subject to mitigation sequencing as defined at chapter 17A.020 SMC in order to condition approval of the development proposal:
- 1. Applications of this chapter would deny all economically viable use of the property;
 - 2. The proposed impact to the critical area is the minimum necessary to allow for reasonable and economically viable use of the property;

3. There is no reasonably viable economic use with less impact on the fish and wildlife habitat;
 4. The requested use or activity will not result in any damage to other property and will not threaten the public health, safety or welfare on or off the property;
 5. Any alteration to the fish and wildlife habitat is the minimum necessary to allow for reasonable use of the property; and
 6. The inability of the applicant to derive economically viable use is not the result of actions by the applicant in subdividing the property, adjusting boundary lines, or other land use activity thereby creating the undevelopable conditions after the effective date of this chapter.
- B. An application for a reasonable use exception under this subsection may be made only as a component of a specific proposed development.
- C. The applicant for an exemption shall provide all information requested by the director and demonstrate that the work qualifies for the reasonable use exception. The director shall determine whether work is exempt and may impose conditions on the work to protect environmentally critical areas and buffers or other property.
- D. City agencies taking the action under any subsection of this section do not need to make an application to the director provided that, if no application is made, they shall comply with all provisions of this section 17E.020.060, make all determinations required to be made by the director, including required conditions, and shall maintain records documenting compliance with all provisions.
- E. All activities pursued under this section 17E.020.060 shall be undertaken using best management practices; the applicant shall maintain records documenting compliance with this subsection E.
- F. The applicant shall pay a fee as determined by the director, which may cover mailing and processing.
- G. The Director shall include (1) findings on each of the criteria listed in subsection A of this section, (2) the approved location and limits of the work, and (3) shall require specific mitigation measures for impacts to all critical areas and related buffers before, during, and after construction. The written decision shall be mailed to the applicant and adjacent property owners, including property owners across public rights-of-way or private easements. The written decision shall provide an appeal procedure as contained in chapter 17G.050 SMC. The director should also advise the applicant as to the applicability of planned unit developments, and any other innovative land use techniques.

17E.020.070 Exemptions

- A. When the director determines that the criteria in this Section A are met, those activities are exempt from the provisions of this chapter, except SMC sections 17E.020.020, 17E.020.030, 17E.020.040, and 17E.020.130.
1. Existing and ongoing agricultural activities, including construction of structures that support agricultural activities, are exempt from this chapter. For purposes of this exemption, the activities are not considered existing and/or ongoing when either of the following conditions occurs:
 - a. The area on which they were conducted has been converted to a nonagricultural use; or
 - b. The area has lain idle more than five years, unless the idle land is registered in a federal or state soils conservation program.
 2. Operation, maintenance or repair of public rights-of-way, legally existing roads, structures or facilities and associated right of way used in the service of the public to provide transportation, electricity, gas, water, telephone, telegraph, telecommunication, sanitary sewer, stormwater treatment and other public utility services are exempt from this chapter. Operation, maintenance, or repair activities that do not require construction permits, if the activity does not further alter or increase impact to, or encroach further within, the critical area or buffer and there is no increased risk to life or property as a result of the proposed operation, maintenance, or repair. Operation and vegetation management performed in accordance with best management practices that is part of ongoing maintenance of structures, infrastructure, or utilities, provided that such management actions are part of a regular ongoing maintenance, do not expand further into the critical area, are not the result of an expansion of the structure or utility, and do not directly impact endangered species. These ongoing activities are not subject to new or additional mitigation when they do not expand further into the critical area, are not the result of an expansion of the structure or utility, or do not directly impact endangered species. Whenever possible, maintenance activities will be confined to late summer and fall.
 3. Expansions of sanitary sewer treatment plants are exempt from the requirements of this chapter subject to an approved habitat management plan.
 4. Work directly related to ending a condition that (a) is an immediate threat to the public health, safety and welfare, or creates an immediate risk of damage to public or private property and (b) requires remedial or preventive action in a timeframe too short to allow compliance with the application provisions of this chapter is exempt from those provisions, provided that the work is the minimum work necessary to end the condition and the work is consistent with the development standards of this chapter to the extent practicable. In any case in which an emergency action is undertaken, the director shall be notified within one working day

of the emergency action. An emergency Hydraulic Project Approval (HPA from WDFW is required if work is to take place within waters of the state. Once the director determines that the condition no longer meets these criteria, restoration and/or mitigation activities must be initiated within one year of the date of the emergency, all work is subject to the provisions of this chapter, including but not limited to its application requirements, its development standards, and any requirements for technical reports and reviews for work that was exempt at the time it was performed

5. Reconstruction, remodeling or maintenance of existing structures is exempt from this chapter, provided that the new construction or related activity does not further intrude into the fish and wildlife habitat conservation area or associated buffer and appropriate protection, including fencing, is provided for these areas for the duration of such activity.
 6. Routine maintenance of existing landscaping within a resident's lot boundaries, including mowing, provided that the activity does not intrude into the fish and wildlife habitat conservation area or associated buffer, pruning, removal of diseased trees or other diseased vegetation, replacement of individual plants when necessary to maintain a unified landscape theme, and vegetation removal within thirty feet of existing structure.
 7. Other activities as listed: Designation of open space or natural area, passive recreation, scientific research, conservation practices, wild crop harvest, and noxious weed control.
- B. All exempt activities shall be undertaken using best management practices; the applicant shall maintain records documenting compliance with this subsection B.
- C. Nothing in this section shall be construed to relieve the property owner of requirements imposed by the State Environmental Policy Act.

17E.020.080 Application Submittal Requirements.

- A. A pre-development conference is required for all regulated activities proposed in potential fish and wildlife habitat conservation areas and associated buffers per chapter 17G.060 SMC. The pre-development conference is intended to acquaint an applicant with standards, requirements, investigation procedures, best management practice, and potential review procedures prior to making application.
- B. A critical areas checklist is required at the time of application for all regulated activities proposed in fish and wildlife habitat areas and associated buffers per SMC 17G.060.090(J).

- C. All activities identified in SMC 17E.020.050 shall meet the following application submittal requirements in addition to the application submittal requirements specified in other codes. The director may modify the submittal requirements based upon reasonable documentation, including BAS, needed to ensure compliance with this chapter, provided no construction activity, clearing, or grading has taken place. A written summary of analysis and findings shall be included in any staff report or decision on the underlying permit.
1. Topographic Survey. A topographic site plan, prepared and stamped by a State of Washington licensed surveyor, is required for sites that include a wetland or its buffer. The topographic site plan shall include the following existing physical elements:
 - a. Existing topography at two-foot contour intervals on-site, on adjacent lands within twenty-five feet of the site's property lines, and on the full width of abutting public and private rights-of-way and easements;
 - b. Terrain and stormwater-flow characteristics within the site, on adjacent sites within twenty-five feet of the site's property lines, and on the full width of abutting public and private rights-of-way and easements;
 - c. Location of areas with significant amounts of vegetation, and specific location and description of all trees with trunks six inches or greater in diameter measured four feet, six inches above the ground, and noting their species;
 - d. Location and boundaries of all existing site improvements on the site, on adjacent lands within twenty-five feet of the site's property lines, and on the full width of abutting public and private rights-of-way and easements. This shall include the amounts of developmental coverage, including all impervious surfaces (noting total square footage and percentage of site occupied);
 - e. Location of all grading activities in progress, and all natural and artificial drainage control facilities or systems in existence or on adjacent lands on the site, within twenty-five feet of the site's property lines, and in the full width of abutting public and private rights-of-way and easements;
 - f. Location of all existing utilities (water, sewer, gas, electric, phone, cable, etc.), both above and below ground, on the site, on adjacent lands within twenty-five feet of the site's property lines and in the full width of abutting public rights-of-way; and

- g. Such additional existing physical elements information for the site and surrounding area as required by the director to complete review of a project subject to the standards of this chapter.
- 2. Additional Site Plan Information. The following site plan information shall also be required for sites that include landslide-prone, flood-prone, riparian corridor, wetland, and steep slope areas or their buffers. Information related to the location and boundaries of critical areas and required buffer delineations shall be prepared by qualified professionals with training and experience in their respective area of expertise as demonstrated to the satisfaction of the director.
 - a. Location and boundaries of all critical areas and related buffers on the site and on adjacent lands within twenty-five feet of the site's property lines, noting both total square footage and percentage of site;
 - b. Location and identification of all riparian corridors and wetlands within one hundred feet of the site's property lines;
 - c. Location and boundaries of all proposed site improvements on the site, on adjacent lands within twenty-five feet of the site's property lines, and on the full width of abutting public and private rights-of-way and easements. This shall include the amount of proposed land disturbing activities, including amounts of developmental coverage, impervious surfaces and construction activity areas (noting total square footage and percentage of site occupied);
 - d. Location of all proposed grading activities and all proposed drainage control facilities or systems on the site or on adjacent lands within twenty-five feet of the site's property lines, and on the full width of abutting public and private rights-of-way and easements;
 - e. Location of all proposed utilities (water, sewer, gas, electric, phone, cable, etc.), both above and below ground, on the site, on adjacent lands within twenty-five feet of the site's property lines, in the full width of abutting public rights-of-way, and any proposed extension required to connect to existing utilities, and proposed methods and locations for the proposed development to hook-up to these services; and
 - f. Such additional site plan information related to the proposed development as required by the director to complete review of a project subject to the standards of this chapter.

3. Technical Reports. Technical reports and other studies and submittals shall be prepared as required by the director detailing soils, geological, hydrological, drainage, plant ecology and botany, and other pertinent site information. The reports, studies and submittals shall be used to condition development to prevent potential harm and to protect the critical nature of the site, adjacent properties, and the drainage basin.

17E.020.090 Habitat Management Plans.

- A. A habitat management plan shall be prepared for regulated uses or other uses and activities that are located in a fish and wildlife habitat conservation area or within one-quarter mile of a priority species den or nest site, if it is determined by the director that the proposal is likely to have a significant adverse impact on the priority habitat or species described in this chapter. Maps of the fish and wildlife habitat conservation areas and priority species point locations (den or nest sites) are maintained in the City's planning services department. A Habitat Management Plan shall also be developed for "Regulated Uses & Activities ", described in SMC 17E.020.050(B)(2)(g, h, i, j, k, l & m). Except for the "Regulated Uses & Activities" described in SMC 17E.020.050(B)(2)(g & h), the determination of a need for a habitat management plan shall be made by the director, in consultation with the Washington State Department of Fish and Wildlife or other qualified authority, as may be determined by the director.
- B. The Habitat Management Plan shall identify any potential adverse impacts to any RHA, which could occur from or be caused by the proposed use or activity, and propose mitigation, restoration, remediation, reclamation, substitution, or enhancement measures, plans or programs that would avoid adverse impacts to any RHA and satisfy the purpose and objectives of this chapter. The Management Recommendations for Washington's Priority Species or as amended, and consultation with a habitat biologist with the Washington State Department of Fish and Wildlife shall be the basis for the report.
- C. The Habitat Management Plan shall be prepared by a qualified biologist, shall be approved in writing by the director and shall contain, but not be limited to, the following information:
 1. A map(s) prepared at an easily readable scale that identifies:
 2. The location of the proposed site.
 3. The relationship of the site to surrounding topographic and built elements.
 4. The nature and intensity of the proposed use or activity.
 5. Proposed improvement(s) locations and arrangements.
 6. Location of High Water Mark, SMA, SMP, & RHA boundary lines.

7. A legend that includes:
 - a. A complete and accurate legal description. The description shall include the total acreage of the parcel.
 - b. Title, scale and north arrow.
 - c. Date.
 - d. Certification by a licensed surveyor or civil engineer.
8. Existing structures and landscape features including the name and location of all water bodies within three hundred feet of the Proposal.
9. Location of priority habitat types or priority species point locations within feet of Proposal.
10. A report, prepared by a qualified biologist that contains:
 - a. A description of the nature, density, and intensity of the proposed use or activity in sufficient detail to allow analysis of such land use change upon identified wildlife habitat.
 - b. An analysis of the effect of the proposed use or activity upon fish and wildlife species and their habitats, identified within the Priority Habitat and Species Program as defined in this chapter.
 - c. A plan, certified by a qualified biologist, that explains how the applicant will avoid, minimize, or mitigate adverse impacts to fish and/or wildlife habitats created by the proposed use or activity. Mitigation, restoration, reclamation, remediation and replacement measures within the plan may include, but are not limited to:
 - i. Establishment of perpetual buffer areas.
 - ii. Preservation and/or restoration of native flora.
 - iii. Limitation of access to habitat area.
 - iv. Seasonal restriction of construction activities.
 - v. Clustering of development and preservation of open space.
 - vi. Signs marking habitats or habitat buffer areas.
 - vii. Recorded deed, plat, binding site plan or PUD covenant, condition or restriction legally establishing RHA for subject property.

- viii. Conservation or Preservation easements.
- ix. Dedication or conveyance of title of a RHA to a public entity for the purpose of conservation
- d. Review comments by a habitat biologist from the Washington State Department of Fish and Wildlife (WDFW). If the habitat management plan recommends mitigation involving federally listed threatened or endangered species, migratory waterfowl, or wetlands, the U.S. Fish and Wildlife Service shall receive a copy of the draft habitat management plan and their review comments shall be included in the final report. The Washington State Department of Fish and Wildlife and, if required, the U.S. Fish and Wildlife Service shall respond in writing to the director with review comments or a request for additional information within twenty eight days from the date of receipt of a draft habitat management plan. If review comments or a request for additional information is not received in the prescribed time frame, the state and/or federal review comments on the habitat management plan shall not be required. The director shall have the authority to approve habitat management plans or require additional information.

D. Structural Setbacks from Buffers.

Unless otherwise provided, buildings and other accessory structures shall be set back a distance of ten feet from the edges of all delineated critical area buffers protecting fish and wildlife habitat conservation and wetland protection areas. The director may reduce the structural setback limit by up to five feet if construction, operation, and maintenance of the building do not create a risk of negative impacts on the adjacent buffer area. Approval of a reduction of the structural setback from the buffer line shall be provided in writing by the director. The following uses may be allowed in the structural setback area:

- 1. Landscaping;
- 2. Uncovered decks;
- 3. Roof eaves and overhangs, maximum of twenty four inches.
- 4. Pervious unroofed stairways and steps;
- 5. Impervious ground surfaces, such as driveways and patios

17E.020.100 Bonding or Other Financial Performance Guarantees.

The director shall require the applicant of a development proposal to post a performance bond to the planning services department for any required mitigation and maintenance of such mitigation activities, including, but not limited to, those required by an HMP. The performance bond shall be in an amount and with surety and conditions sufficient to ensure implementation of the requirements of any mitigation plan approved pursuant to this section.

17E.020.110 Posting, covenants, and recording conditions.

- A. During construction, the director may require conditions to be posted on the site that are visible from public rights-of-way and buffer areas to be flagged with temporary markers or temporary fencing.
- B. The director shall require the boundaries of critical areas and their buffers and any permanent conditions imposed be legibly shown and described in a permanent covenant with the property, which must be acceptable to the director and city attorney and shall be recorded in the Spokane County Auditor's Office.
- C. The covenant shall be recorded prior to the issuance of any permit or at the time a plat is recorded.
- D. The director may require placement of small permanent visible markers to delineate the areas described in subsection B. Said markers shall be posted at intervals required by the director and must be perpetually maintained by the property owner. The markers shall be worded as follow or with alternative language approved by the Director: "The area beyond this sign is a critical area. This sensitive environment is to be protected from alteration or disturbance. Please call the City of Spokane for more information." The location of the markers shall be legibly shown and described in the permanent covenant.

17E.020.120 Incentives and Stewardship Options.

- A. For residential development proposals on lands containing potential or identified critical areas, including fish and wildlife habitat conservation and/or riparian habitat areas and buffers, the applicant may apply for planned unit development (PUD) under chapter 17G.070 SMC. The maximum number of dwelling units (DU) for a lot or parcel that contains a fish and wildlife habitat conservation and/or riparian habitat area and buffer is determined by the site's zoning and by the density bonus allowed in chapter 17G.070 SMC. The use of residential density transfer or clustering through the use of planned unit developments (PUDs) including bonus density is encouraged as a means to protect and preserve wetlands, wetland buffers and fish and wildlife habitat conservation

areas. The provisions of chapter 17G.070 SMC shall control the use of density transfer or clustering, planned unit developments, and bonus density.

B. Property Tax and Income Tax Advantages.

1. Any owner of a fish and wildlife habitat conservation area who has dedicated a conservation easement or entered into a perpetual conservation restriction with a department of the local, state, or federal government or a nonprofit organization to permanently control some or all the uses and activities within these areas may ask the Spokane County Assessor to reevaluate that specific area consistent with those restrictions and provisions of open space land current use taxation (see RCW 84.40.030).
2. There may be significant federal income tax advantages that can be realized by an individual or estate for gifts of real property for conservation purposes to local governments or non-profit organizations, such as land trusts. The specific rules on federal income tax deductions can be found in section 170 of the Internal Revenue Code.

C. Stewardship Options.

1. The Spokane County Conservation District offers stewardship information, classes, and technical assistance to property owners. Programs include shoreline stewardship, forestry, small acreage conservation agriculture, water resources, and soil information.
2. Spokane County Conservation Futures program, initiated in 1994, is funded by a property tax assessed for each home in the county. This tax money is earmarked solely for the acquisition of property and development rights. These funds acquire lands or future development rights on lands for public use and enjoyment. The Conservation Areas are defined areas of undeveloped land primarily left in its natural condition. These areas may be used for passive recreational purposes, to create secluded areas, or as buffers in urban areas. Conserved lands include wetlands, farmlands, steep hillsides, river corridors, viewpoints and wildlife habitats and corridors.

17E.020.130 Administration

- A. The department director identified in Chapter 17A.010 SMC ("director") shall administer and interpret the provisions of this chapter, except as specifically provided. The director is authorized to adopt, in accordance with administrative procedures set by ordinance, such rules as are necessary to implement the requirements of this chapter and to carry out the duties of the director hereunder. Except as otherwise provided in this chapter, the administrative procedures set forth in chapters 17G.010 and 17G.060 SMC shall apply to this chapter.

- B. The director may also consult with other City departments and state and federal agencies as necessary to obtain additional technical and environmental review assistance.
- C. The director shall review and analyze all applications for all permits or approvals subject to this chapter. Such applications shall be approved only after the director is satisfied the applications comply with this chapter.
- D. Every other City department issuing a permit for development on parcels containing a critical area or associated buffer shall require the use of best management practices to prevent impacts to critical areas or associated buffers and to meet the intent of this chapter. Departments shall require mitigation to address unavoidable impacts. All such City departments shall maintain records documenting compliance with this subsection.
- E. Except as otherwise stipulated in this chapter, the administrative procedures set forth in chapter 17A.010 SMC apply to this chapter.

17E.020.140 Violations

- A. It is a violation of this chapter to fail to comply with any provision of this chapter or with any term of any permit condition or approval issued pursuant to this chapter.
- B. It is a violation of this chapter to fail to comply with any order issued pursuant to this chapter or to remove or deface any sign, notice, complaint or order required by or posted in accordance with this chapter.
- C. It is a violation of this chapter to misrepresent any material fact in any application, on plans, or in any other information submitted to obtain any determination, authorization, permit condition, or approval under this chapter.
- D. It is a violation of this chapter to aid and abet, counsel, encourage, hire, command, induce or otherwise procure another to violate or fail to comply with this chapter.
- E. Violations of this chapter are subject to the penalties set forth in Chapter 1.05 SMC.

17E.020.150 Authority to Enforce

- A. The director is authorized to enforce this chapter and may call upon other appropriate City departments to assist in enforcement.
- B. It is the intent of this chapter to place the obligation of complying with its requirements upon the owner, occupier, or other person responsible for the

condition of the critical area, buffer, land, premises, building, or structure within the scope of this chapter.

- C. No provision of or term used in this chapter is intended to impose any duty upon the City or any of its officers or employees that would subject them to damages in a civil action.
- D. Nothing contained in this chapter is intended to be nor shall be construed to create or form the basis for liability on the part of the City or its officers, officials, employees or agents for any injury or damage resulting from the failure of any owner of property or land to comply with the provisions of this chapter, or by reason or in consequence of any inspection, notice, order, certificate, permission or approval authorized or issued in connection with the implementation or enforcement of this chapter, or by reason of any action or inaction on the part of the City related in any manner to the enforcement of this chapter by its officers, officials, employees or agents.

ADOPTED BY THE CITY COUNCIL ON DECEMBER 03, 2007.

Alexander J. Shogan, Jr.
Council President

Mary B. Verner (12-07-07)
Mayor, Mary B. Verner Date

Attest:

Leri R. Hoffer
City Clerk

RECEIVED
12-10-07
CITY CLERK'S OFFICE
SPOKANE, WA



Approved as to form:

Michael P. Puccio
Assistant City Attorney

01-08-08
EFFECTIVE DATE

Bab112607

NOV 14 2007

AgSht01-18-2006

AGENDA SHEET FOR COUNCIL MEETING OF: November 26, 2007

CITY CLERK'S OFFICE
SPOKANE, WA

Submitting Dept.
Development Incentives

Contact Person/Phone No.
Melissa Eadie X6069

Council Sponsor
Councilman French

ADMINISTRATIVE SESSION

- ☐ Contract
- ☐ Report
- ☐ Claims

LEGISLATIVE SESSION

- ☐ Emergency Ord
- ☐ Resolution
- ☐ Final Reading Ord
- ☒ First Reading Ord
- ☐ Special Consideration
- ☐ Hearing

CITY PRIORITY

- ☐ Communications
- ☐ Economic Development
- ☒ Growth Management
- ☐ Human Services
- ☐ Neighborhoods
- ☐ Public Safety
- ☐ Quality Service Delivery
- ☐ Racial Equity/Cultural Diversity
- ☐ Rebuild/Maintain Infrastructure

CLERK'S FILE

RENEWS

CROSS REF

ENG

BID

REQUISITION

STANDING COMMITTEES

(Date of Notification)

- ☐ Finance
- ☐ Neighborhoods
- ☐ Planning/Community & Econ Dev

☐ Public Safety☐ Public Works

Neighborhood/Commission/Committee Notified:
Community Assembly, Plan Commission
Action Taken: Plan Commission: Recommended
for approval

AGENDA**WORDING:**

(If contract, include
the term.)

An ordinance relating to floodplain management; amending SMC sections 17E.030.010, 17E.030.030, 17E.030.040, 17E.030.050, 17E.030.060, 17E.030.080, 17E.030.090 and 17E.030.100.

BACKGROUND:

See Attached.

(Attach additional
sheet if necessary)

RECOMMENDATION: Approve**Fiscal Impact:** N/A**Budget Account:** o N/A☐ Expenditure: \$

#

☐ Revenue: \$

#

☒ Budget Neutral**ATTACHMENTS:** Include in Packets:

Final Draft Ordinance, Summary of Changes, Best Available Science Review, Cover Letter, Plan Commission Findings and Conclusions, Flood Hazard Areas Map.

On file for Review in Office of City Clerk:

SIGNATURES:

Department Head

Division Director

Finance

Legal

Deputy Mayor for Mayor

Council President

DISTRIBUTION:

Planning – K Pelton
Development Incentives – M
Eadie

Planning – P Hall

COUNCIL ACTION:

* See Council Action Memorandum
dated 12/14/07

FIRST READING OF THE
ABOVE ORDINANCE WAS HELD ON
November 26, 2007
AND FURTHER ACTION WAS DEFERRED

CITY CLERK

PASSED BY
SPOKANE CITY COUNCIL:

DEC 03 2007

CITY CLERK

C34150

SHAPING SPOKANE VOLUME III, APPENDIX G
AGENDA SHEET FOR COUNCIL MEETING OF: November 26, 2007



Submitting Dept.
 Development Incentives

Contact Person/Phone No.
 Melissa Eadie X6069

Council Sponsor
 Councilman French

ADMINISTRATIVE SESSION

- ☐ Contract
- ☐ Report
- ☐ Claims

LEGISLATIVE SESSION

- ☐ Emergency Ord
- ☐ Resolution
- ☐ Final Reading Ord
- ☒ First Reading Ord
- ☐ Special Consideration
- ☐ Hearing

CITY PRIORITY

- ☐ Communications
- ☐ Economic Development
- ☒ Growth Management
- ☐ Human Services
- ☐ Neighborhoods
- ☐ Public Safety
- ☐ Quality Service Delivery
- ☐ Racial Equity/Cultural Diversity
- ☐ Rebuild/Maintain Infrastructure

CLERK'S FILE _____

RENEWS _____

CROSS REF _____

ENG _____

BID _____

REQUISITION _____

STANDING COMMITTEES

(Date of Notification)

- ☐ Finance _____
- ☐ Neighborhoods _____
- ☐ Planning/Community & Econ Dev _____

- ☐ Public Safety _____
- ☐ Public Works _____

Neighborhood/Commission/Committee Notified:

 Community Assembly, Plan Commission
 Action Taken: Plan Commission: Recommended
 for approval

BACKGROUND:

(Attach additional
 sheet if necessary)

The GMA identifies five Critical Areas that must be identified, designated, and protected (RCW 36.70A.030): Wetlands, areas with a critical recharging effect on aquifers used for potable water, frequently flooded areas, geologically hazardous areas, and fish and wildlife habitat conservation areas. In 2002 the GMA was amended to require jurisdictions to take legislative action to review and, if needed, revise their comprehensive plans and development regulations to ensure the plans and regulations comply with the requirements of the act according to a seven-year cycle. The City of Spokane is required to take legislative action by December 1, 2007. In addition, GMA requires that Best Available Science be included in the review of critical areas regulations (RCW 36.70A.172). The public participation process approved by Council in April 2007 was followed, and Best Available Science included in the review that results in the proposed amendments.



CITY PLAN COMMISSION
808 W. SPOKANE FALLS BLVD.
SPOKANE, WASHINGTON 99201-3329
(509) 625-6060
FAX (509) 625-6013

November 15, 2007

RECEIVED

NOV 16 2007

CITY CLERK'S OFFICE
SPOKANE, WA

City Council President Joe Shogan and City Council Members
808 W. Spokane Falls Blvd.
6th Floor City Hall
Spokane, WA 99201

Re: Critical Areas Update – Final Draft Ordinances for Adoption by City Council.

Dear City Council President Joe Shogan and City Council Members:

The Plan Commission has completed its review of the 2007 Critical Area Ordinances Update and forwards the proposed amendments to the City Council. The review and update process followed the public participation process approved by Council in April 2007 along with seven workshops covering the five ordinances. The review included recommended changes to other code sections implementing the critical area regulation amendments. The Plan Commission hearing was held October 24, 2007. After receiving oral and written testimony, the Plan Commission completed deliberations on November 14, 2007. The proposed amendments to these ordinances are forwarded to you with the unanimous approval of the Plan Commission

The early, continuous, and informed participation of citizens in planning processes is a goal and requirement of the Growth Management Act (GMA) (RCW 36.70A.020, .035 and .140). Critical Area identification, designation, and protection are required by GMA and include Geologically Hazardous, Fish and Wildlife Habitat Conservation, Critical Aquifer Recharge, Frequently Flooded, and Wetland Areas. The Plan Commission recognizes that efforts to inform and engage the public, local experts, and state agencies contributed to the positive dialogue and comments during the hearing process.

The Plan Commission also takes this opportunity to note that a recurring theme of the review and update was the administration and implementation of the Critical Area Ordinances (CAO). Many questions were asked of staff regarding public education, departmental processes, and enforcement of the codes protecting critical areas, lives, and public and private property. It was clear to the Plan Commission that updating the regulations would likely be one of several steps in carrying out the intent of the Growth Management Act for critical areas.

The Plan Commission recommends approval of the amendments to the Spokane Municipal Code at 17E.010 Protection of Aquifer Recharge Areas, 17E.020 Spokane Fish and Wildlife Habitat Conservation Areas, 17E.030 Floodplain Management, 17E.040 Spokane Geologically Hazardous Areas, 17E.070 Spokane Wetlands Protection, and 17A.020 Definitions.

Sincerely,

Michael Ekins
President, City Plan Commission

Attachments: Findings and Conclusions

SPOKANE PLAN COMMISSION FINDINGS AND CONCLUSIONS***Development Regulation Amendments*****Critical Area Ordinances**

Spokane Municipal Code 17E.010 Aquifer Protection, 17E.020 Fish and Wildlife Habitat Conservation Areas, 17E.030 Floodplain Management, 17E.040 Geological Hazards, 17E.070 Wetlands Protection

November 14, 2007

The City Plan Commission recommends adoption of ordinances amending Spokane Municipal Code (SMC) Chapter 17E.010 relating to protection of aquifer recharge areas and SMC 17E.030 relating to frequently flooded areas, and repealing certain SMC sections and adopting a new Chapter 17E.020 relating to protection of fish and wildlife conservation areas, adopting a new Chapter 17E.040 relating to geologically hazardous areas, and adopting a new chapter 17E.070 relating to protection of wetlands. Hereinafter, the foregoing ordinances will be collectively referred to as the "Critical Areas Ordinances". The Plan Commission recommends adoption of the ordinance amending SMC Chapter 17A.020 relating to definitions for the Unified Development Code.

In making this recommendation, the Commission makes the following findings and conclusions:

FINDINGS:

1. The Washington State Legislature enacted the Growth Management Act (GMA) in 1990. GMA requires cities to adopt development regulations that protect critical areas that are required to be designated under RCW 36.70A.170.
2. GMA also requires cities to periodically review and update development regulations protecting critical areas, and establishes December 1, 2007 as a deadline by which the City of Spokane is required to take action updating its critical area protection ordinances.
3. Critical areas that must be designated under GMA include wetlands, areas with a critical recharging effect on aquifers used for potable water, frequently flooded areas, geologically hazardous areas, and fish and wildlife habitat conservation areas ("Critical Areas").
4. The City Council adopted the Critical Areas Report in 1994. The Report documented the classification, designation, and regulation of wetlands, frequently flooded areas and aquifer recharge areas through the existence of previously adopted ordinances. The Report also classified, designated and proposed a regulation scheme for fish and wildlife habitat conservation areas and geologically hazardous areas.

5. The City of Spokane adopted a Comprehensive Plan in May of 2001 that complies with the requirements of the Growth Management Act, including designated Critical Areas and providing policy support for the protection of Critical Areas in Chapter 9, Natural Environments.
6. The Critical Area Updates referenced herein above (Critical Area Ordinances, Division E Environmental Standards) are consistent with the Comprehensive Plan, and were developed in accordance with an adopted public participation process including an Aquifer Protection and Wetlands Review Group.
7. The proposed amendments to SMC Chapter 17A.020 Definitions are necessary to provide clarity for the public and administrators of specialized terminology associated with the Critical Area Ordinances.
8. Development may result in cumulative impacts to those functions and values of Critical Areas that contribute to and are necessary for a healthy natural environment and perceived quality of life.
9. The development of residences, businesses, shopping areas and other structures, and the clearing of land for accommodation of livestock and for such development all have the potential of adversely and significantly impacting the functions and values of Critical Areas.
10. The unwise development of resource lands or areas susceptible to natural hazards may lead to inefficient use of limited public resources, jeopardize environmental resource functions and values, subject persons and property to unsafe conditions, and affect the perceived quality of life.
11. It is more costly to remedy the loss of Critical Area functions and values than to conserve and protect them from loss or degradation.
12. In determining what Critical Areas are to be afforded a particular degree of protection, the City of Spokane has evaluated a wide range of the best available science with respect to the Critical Areas to make informed decisions that meet the intent of the Growth Management Act and that are also reflective of local needs.
13. The sources of this best available science that were evaluated and included in Critical Areas Ordinances are listed below:
 - **Aquifer Recharge Areas:** General Policies U.S. Code Title 42- The Public Health and Welfare, Chapter 82- Solid Waste Disposal, Subchapter IX- Regulation of Underground Storage Tanks, Spokane Aquifer Water Quality Management Plan, Spokane County, Washington "208" Program, County Engineers Office & The Spokane Regional Planning Conference, Critical Aquifer Recharge Areas-Guidance Document, Washington State Department of Ecology, Washington's Source Water Assessment Program, Washington State Department of Health, Office of Drinking

Water, Washington State Department of Health, Division of Environmental Health, Stormwater Management Manual for Eastern Washington, Washington State Department of Ecology, Water Quality Program, International Fire Code, Spokane Aquifer Joint Board (SAJB) and Aquifer Protection Council 2007 Wellhead Protection Update, Bi-State Spokane-Rathdrum Aquifer Study, City of Spokane Environmental Programs, Washington State Department of Ecology.

- **Fish & Wildlife Habitat Conservation Areas:** Washington State Forest Practices Rules, Washington State Department of Natural Resources, stream typing, timber harvest and riparian zones, Habitat, and Priority habitat and Species Washington State Department of Fish and Wildlife, Habitat Protection Toolkit, Washington Environmental Council, Streamnet Pacific Northwest Interactive Mapper.
- **Frequently Flooded Areas:** Yakima County's Review of Best Available Science For Inclusion in Critical Areas Ordinance Update, October 2006, King County Best Available Science, Volume 1, Review of Science Literature, Thurston County, Flood and Channel Migration Hazard Areas, Department of Ecology – Floods Section, Department of Homeland Security (FEMA).
- **Geologically Hazardous Areas:** Dr Richard Orndorff, EWU consulted for review of this ordinance and mapping of geohazards in the City of Spokane, U.S. Department of Agriculture Natural resources Conservation Service.
- **Wetlands:** Wetlands in Washington State, Volume 1: A Synthesis of the Science, Wetlands in Washington State, Volume 2: Guidance for Protecting and Managing Wetlands , Washington State Wetland Rating System for Eastern Washington, Wetland Mitigation in Washington State Part 1: Agency Policies and Guidance, Wetland Mitigation in Washington State Part 1: Agency Policies and Guidance, Dr. Robert Quinn, EWU, Dr. Mike Folsom, EWU, Larry Dawes, qualified wetland professionals with the City of Spokane, Jeremy Sikes, Dept of Ecology, wetlands professional, City of Spokane Developer Services staff Kris Becker, PE.

14. Protection standards for one Critical Area often provide protection for one or more other Critical Areas.

15. Critical Areas may also be protected by other actions by the City of Spokane, such as stormwater management standards, critical area restoration, and public education; and from other regulations, such as the Forest Practices Act, the Shoreline Management Act, and the State Environmental Policy Act.

- Forest Practices Act
- Municipal Water Law
- Shoreline Management Act
 - Chapter 11.15 SMC Shoreline Master Program
- State Environmental Policy Act (SEPA)
- Division D Citywide Standards SMC

- Concurrency Certification, Stormwater Facilities Stormwater Facilities
- Division E Environmental Standards SMC
 - Aquifer Protection, Fish & Wildlife Conservation, Floodplain Management, SEPA, Wetland
- Division G Administration and Procedures SMC
 - Building and Construction Permits, Land Use Application Procedures, Planned Unit Developments, Subdivisions
- Division I Enforcement
- Chapter 1 SMC
 - General Provisions, Civil Infraction System
- Chapter 13 SMC Public Utilities and Services
- Water Stewardship Program

16. Aquifer Recharge Areas: WAC 365-190-080 defines well head protection areas, sole source aquifers, special protection areas, and other areas that are susceptible or vulnerable to ground water contamination as areas with a critical recharging effect on aquifers used for potable water (also referred to as critical aquifer recharge areas), the City of Spokane's drinking water comes from groundwater supplies, once ground water is contaminated it is difficult, costly, and sometimes impossible to clean up, preventing groundwater contamination is necessary to avoid exorbitant costs, hardships, and potential physical harm to people, *Guidance Document for Establishment of Critical Aquifer Recharge Area Ordinances*, by the Department of Ecology, 2000, includes scientific recommendations for protecting groundwater, including limiting certain uses and the intensity of development in critical aquifer recharge areas, and potable water is an essential life-sustaining element.

17. Fish and Wildlife Habitat Conservation Areas: Fish and wildlife habitat conservation areas perform many important physical and biological functions that benefit the City of Spokane and its residents, including but not limited to: maintaining species diversity and genetic diversity; providing opportunities for food, cover, nesting, breeding and movement for fish and wildlife; serving as areas for recreation, education and scientific study and aesthetic appreciation; helping to maintain air and water quality; controlling erosion; and providing neighborhood separation and visual diversity within urban areas, wetlands and streams are environmentally sensitive and serve numerous natural functions and values. These functions include wildlife and fisheries habitat, water quality protection, flood protection, shoreline stabilization, stream flow, and ground water recharge and discharge. In many situations these functions cannot be adequately replicated or replaced, the scientific literature supports in the inclusion of protective buffers from streams to provide sediment control, nutrient inputs to downstream waters, large woody debris, and other functions important to riparian areas, the Washington Department of Fish and Wildlife has prepared management recommendations for the preservation of priority habitat and species, which are based on the best available science, and include, in some instances, recommended protective buffer distances, the Department of Natural Resources has classified watercourses according to two stream-typing systems

based on channel width, fish use, and perennial or intermittent status and WAC 365-190-080(5) grants [the City] the flexibility to make decisions in the context of local circumstances, and specifically excuses local jurisdictions from being required to protect "all individuals of all species at all time."

18. **Frequently Flooded Areas:** Flood hazard areas are subject to periodic inundation that results in loss of life and property, health, and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare, these flood losses are caused by development in areas prone to inundation that increase flood heights and velocities, and when inadequately anchored, damage uses in other areas. Uses that are inadequately floodproofed, elevated, or otherwise protected from flood damage also contribute to flood loss, floodplain and stream connectivity are major elements in maintaining healthy riparian habitat and off-channel habitats for the survival of fish species and conveyance of floodwaters. If river, floodplains and other systems are not viewed holistically as biological, geomorphological units, this can lead to serious degradation of habitat and increase flood hazards, which, in turn, can contribute to listing of various fish species as threatened or endangered and result in extraordinary public expenditures for flood protection and relief, and frequently flooded areas, including the 100-year floodplain and the floodway, are commonly mapped on flood insurance maps, often known as Flood Insurance Rate Maps, or FIRMs.
19. **Geologically Hazardous Areas:** Geologically hazardous areas are subject to periodic geological events that results in loss of life and property, health, and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare, geologic hazards may be exacerbated by development and human activity in sensitive areas, and impacts resulting from geologic hazards may be reduced by limiting development and human activity within or adjacent to the geologic hazard, and some geologic hazards may be intensified during periods of consistent or heavy rainfall that results in ground saturation or surface water drainage flows.
20. **Wetlands:** Wetlands and streams are environmentally sensitive and serve numerous natural functions and values. These functions include wildlife and fisheries habitat, water quality protection, flood protection, shoreline stabilization, stream flow, and ground water recharge and discharge. In many situations these functions cannot be adequately replicated or replaced, the scientific literature supports in the inclusion of protective buffers from wetlands to provide sediment control and nutrient inputs to wetlands, and to protect important wetland functions, wetlands are identified and rated according to the *Washington State Wetland Identification and Delineation Manual*, and *Washington State Wetland Rating System* (Eastern and Western Washington), prepared by the Department of Ecology, the scientific literature supports protective buffers ranging from 25 to 300 feet of relatively intact native vegetation to adequately protect wetland functions and values, appropriate wetland mitigation ratios – ratios of areas of

wetland replacement and enhancement to that altered or destroyed – are established in *Wetland Mitigation Replacement Ratios: Defining Equivalency*, published by the Department of Ecology, 1992.

21. A SEPA Environmental Checklist was completed and a Determination of Non-Significance issued, with notice published in the Spokesman-Review on October 5, 2007.
22. An Open House was held on October 11, 2007. Notice of the Open House was mailed to property owners with vacant and or redevelopable land in potential Critical Areas. Notice was also published in the Spokesman-Review.
23. Notice of City of Spokane Plan Commission Public Hearing on the amendments to five Critical Areas Ordinances was published in the Spokesman-Review on October 15, 2007.
24. The Plan Commission held a public hearing and took testimony on the Critical Areas Ordinances on October 24.
25. Comments submitted to the written record from Washington Department of Fish & Wildlife, Futurewise, and Avista Corporation were addressed individually by staff and the Plan Commission. Response to comments resulted in the addition of priority species to 17E.020 per WDFW, and a structural setback from a critical area buffer to 17E.020 and 17E.070 based on BAS protection of buffers as a Best Management Practice (BMP) as commented by WDFW, Futurewise, and Dept. of Ecology. All other comments and responses are recorded as addressed by the regulations, required by BAS, or requirements of other regulatory agencies.
26. The Plan Commission completed deliberations on 17E.010, 17E.030, and 17E.040 SMC on November 6, 2007. The Plan Commission completed deliberations on 17E.020 and 17E.070 SMC on November 14, 2007. The Plan Commission recommends all five Critical Area Ordinance amendments go forward to the City Council with changes as deliberated.
27. The U.S. Constitution prohibits the taking of private property without just compensation.

CONCLUSIONS:

1. The review and subsequent amendments to Aquifer Protection, Fish and Wildlife Habitat conservation Areas, Floodplain Management, Geologically Hazardous Areas, and Wetlands Protection regulations will promote the protection of the City's Critical Areas, as required by the Growth Management Act.
2. Working with state agencies, consulting with other jurisdictions, consulting with qualified local scientific experts, and researching the latest reports and studies, the City has incorporated the "best available science" into the amendments of

these ordinances. These ordinances should be updated as new and better science is developed.

3. The environmental review and determination for the proposed amendments to the regulations fulfilled the requirements and intent of the Spokane Environmental Ordinance and the State Environmental Policy Act.
4. Adoption of these amendments is of public necessity; will benefit the general welfare of the community; constitutes good planning practices; and will not be unduly detrimental to properties within critical areas.
5. Mechanisms to ensure opportunity for public input into the planning process fulfilled legal requirements and the intent and policies of the Plan Commission.
6. The City's Critical Area Ordinances are supported by maps showing designated Critical Areas. It is recognized, however, that some Critical Areas may not be mapped. Mapping shall be for informational purposes only, and the criteria for identification of Critical Areas in the regulations shall prevail.
7. Adoption of these changes will officially amend Chapters 17A.020, 17E.010 and 17E.030 of the SMC, and will repeal certain chapters of the SMC and replace those chapters with new Chapters 17E.020, 17E.040, and 17E.070 SMC.

These findings and conclusions were approved on November 14, 2007

Michael Ekins, President
Spokane Plan Commission

City Council Hearing – Critical Areas Update

November 26, 2007

Floodplain Management - Summary of Substantive Changes

(Frequently Flooded)

Division E Environmental SMC 17E.030

Section	Change
17E.030.010	Statutory Authorization Deleted specific Comp Plan chapter citation; added Shoreline Master Program.
17E.030.030	Purpose Added protection of ecological functions and values to statement.
17E.030.040 (C)	Methods of Reducing Flood Losses Added channel migration zone (CMZ) to areas where alterations are controlled. More applicable to Latah Creek; this is the corridor of variable width that includes the current river plus adjacent area through which the channel has migrated or is likely to migrate within a given timeframe, usually one hundred years.
17E.030.050	General Provisions Added Shoreline Master Program – whichever provides the most stringent restrictions shall prevail.
17E.030.060 (B), (C)(5)	Development Permit (B) Added pre-development conference. (C)(5) Added requirement to complete Critical Areas Checklist. Added Section D title “Fee Processing.” Added Section E title “Fee Schedule.”
17E.030.080 (A)(4)	Duties of Local Administrator Added review of all development permits for compliance with Shoreline Master Program policies and provisions.
17E.030.090	Variance Procedure Hearing Examiner to consider the relationship of the proposed development to the Shoreline Master Program policies and regulations.
17E.030.100	Variances Added title “Conditions”

SMC 17E.030 Floodplain Management BAS Review

Code Provisions Based on BAS

SHAPING SPOKANE VOLUME III, APPENDIX G

Best Available Science	Spokane Municipal Code 17E.030 Floodplain Management
<p><u>General Policies</u></p> <ol style="list-style-type: none"> 1. No adverse impact floodplain – floodplain action on one property or in one community should not adversely impact flood risks for other property. 2. Prevent risk to health and human safety; preserve aquatic and riparian habitat resources. <p><u>Development should:</u></p> <ul style="list-style-type: none"> • Compensate for lost storage capacity • Reduce or limit impervious surfaces • Retain native vegetation • Prohibit or restrict fill placement <p><u>Development should not:</u></p> <ul style="list-style-type: none"> • Increase flood elevations • Increase flow velocities • Change flood flow patterns • Increase erosion • Increase are of flood inundation <p><u>Yakima County's Review of Best Available Science For Inclusion in Critical Areas Ordinance Update, October 2006</u></p> <p><u>King County Best Available Science, Volume 1, Review of Science Literature</u></p> <p><u>Thurston County, Flood and Channel Migration Hazard Areas</u></p>	<p><u>General Standards</u> - Areas of special flood hazard</p> <ul style="list-style-type: none"> • Anchoring required to prevent flotation, collapse or lateral movement • Drainage paths required around structures • Construction materials, methods, practices must be minimize flood damage. Electrical, heating, ventilation, plumbing and air-conditioning equipment must be designed to prevent flood damage. • Utilities must be designed to minimize or eliminate floodwater infiltration. Wells must be located outside of floodway. Sanitary sewer systems and on-site disposal systems designed to minimize or eliminate infiltration of floodwater or discharge into floodwaters. • Building permits require reasonable assurance the building will be safe from flooding. <p><u>Specific Standards</u></p> <ul style="list-style-type: none"> • Lowest floor, including basement must be elevated two feet above the base flood elevation • Automatic equalization of hydrostatic flood forces for fully enclosed exterior walls subject to flooding. <p><u>Base flood elevation areas without designated floodway</u></p> <ul style="list-style-type: none"> • No new construction, substantial improvements, or other development (including fill), in zones A1-30 and AE unless it will not increase base flood elevation more than one foot at any point in city. <p><u>Floodways</u></p> <ul style="list-style-type: none"> • Encroachments, including fill, new construction, substantial improvements and other development require certification by registered professional engineer increased flood levels will not result during base flood discharge <p><u>Shallow Flooding Areas</u></p> <ul style="list-style-type: none"> • New Construction and substantial improvement of residential structures and mobile homes in these areas shall elevate the lowest floor two feet above the number specified in the communities flood insurance rate map or two feet above the nearest grade if no number is specified or, • Together with attendant utility and sanitary facilities, be completely flood-proofed and a registered professional engineer or architect shall certify such.

SMC 17E.030 Floodplain Management BAS Review Code Provisions Based on BAS

	<ul style="list-style-type: none"> • Adequate drainage paths shall be required around structures on slopes to channel water. • Recreational vehicles placed on these sites must be on site for fewer than 180 days, or be fully ready for highway use, on its wheels or jacking system, attached only by quick disconnect systems, and have no permanently attached additions, or, • Meet the requirements stated above and anchoring requirements for mobile homes. <p><i>Essential Public Facilities</i></p> <ul style="list-style-type: none"> • To the extent possible, located outside of special flood hazard areas. • If constructed in a special flood hazard area, the lowest floor must be elevated three feet above the base flood elevation. • Flood proofed and sealed to prevent release or displacement of toxic substances • Have access routes elevated to or above base flood elevations.
<p>The ordinance meets the BAS standards for protecting frequently flooded areas and for inclusion in the review. SMC 17E.030.030 Protection of Ecological Functions and Values added SMC 17E.030.040 Channel Migration Zones are now included in areas where alterations are to be controlled and will be further addressed in the Shoreline Master Program Update. Channel Migration Zones are not a designated critical area but are an integral component of the floodplain. SMC 17E.030.050 Requires SMP compliance. SMC 17E.030.060 Adds pre-development conference and Critical Areas Checklist. SMC 17E.030.080 – Review for compliance with SMP. SMC 17E.030.090 Variances Added consideration of SMP requirements and Riparian habitat is addressed in the Fish and Wildlife Habitat ordinance. The removal of native riparian vegetation will also be addressed in the Shoreline Master Program Update.</p>	

RECEIVED

11-16-81
CITY CLERK'S OFFICE
SPOKANE, WA

Flood Hazard Areas

Legend

Flood Hazard Areas For 100 Years And Shallow Flooding

Roads

City Limits



Source: GIS
Date: 4/5/2007



C 34150

C 3 4 1 5 0

SPOKANE PLAN COMMISSION FINDINGS AND CONCLUSIONS***Development Regulation Amendments*****Critical Area Ordinances**

Spokane Municipal Code 17E.010 Aquifer Protection, 17E.020 Fish and Wildlife Habitat Conservation Areas, 17E.030 Floodplain Management, 17E.040 Geological Hazards, 17E.070 Wetlands Protection

November 14, 2007

The City Plan Commission recommends adoption of ordinances amending Spokane Municipal Code (SMC) Chapter 17E.010 relating to protection of aquifer recharge areas and SMC 17E.030 relating to frequently flooded areas, and repealing certain SMC sections and adopting a new Chapter 17E.020 relating to protection of fish and wildlife conservation areas, adopting a new Chapter 17E.040 relating to geologically hazardous areas, and adopting a new chapter 17E.070 relating to protection of wetlands. Hereinafter, the foregoing ordinances will be collectively referred to as the "Critical Areas Ordinances". The Plan Commission recommends adoption of the ordinance amending SMC Chapter 17A.020 relating to definitions for the Unified Development Code.

In making this recommendation, the Commission makes the following findings and conclusions:

FINDINGS:

1. The Washington State Legislature enacted the Growth Management Act (GMA) in 1990. GMA requires cities to adopt development regulations that protect critical areas that are required to be designated under RCW 36.70A.170.
2. GMA also requires cities to periodically review and update development regulations protecting critical areas, and establishes December 1, 2007 as a deadline by which the City of Spokane is required to take action updating its critical area protection ordinances.
3. Critical areas that must be designated under GMA include wetlands, areas with a critical recharging effect on aquifers used for potable water, frequently flooded areas, geologically hazardous areas, and fish and wildlife habitat conservation areas ("Critical Areas").
4. The City Council adopted the Critical Areas Report in 1994. The Report documented the classification, designation, and regulation of wetlands, frequently flooded areas and aquifer recharge areas through the existence of previously adopted ordinances. The Report also classified, designated and proposed a regulation scheme for fish and wildlife habitat conservation areas and geologically hazardous areas.

Water, Washington State Department of Health, Division of Environmental Health, Stormwater Management Manual for Eastern Washington, Washington State Department of Ecology, Water Quality Program, International Fire Code, Spokane Aquifer Joint Board (SAJB) and Aquifer Protection Council 2007 Wellhead Protection Update, Bi-State Spokane-Rathdrum Aquifer Study, City of Spokane Environmental Programs, Washington State Department of Ecology.

- **Fish & Wildlife Habitat Conservation Areas:** Washington State Forest Practices Rules, Washington State Department of Natural Resources, stream typing, timber harvest and riparian zones, Habitat, and Priority habitat and Species Washington State Department of Fish and Wildlife, Habitat Protection Toolkit, Washington Environmental Council, Streamnet Pacific Northwest Interactive Mapper.
- **Frequently Flooded Areas:** Yakima County's Review of Best Available Science For Inclusion in Critical Areas Ordinance Update, October 2006, King County Best Available Science, Volume 1, Review of Science Literature, Thurston County, Flood and Channel Migration Hazard Areas, Department of Ecology – Floods Section, Department of Homeland Security (FEMA).
- **Geologically Hazardous Areas:** Dr Richard Orndorff, EWU consulted for review of this ordinance and mapping of geohazards in the City of Spokane, U.S. Department of Agriculture Natural resources Conservation Service.
- **Wetlands:** Wetlands in Washington State, Volume 1: A Synthesis of the Science, Wetlands in Washington State, Volume 2: Guidance for Protecting and Managing Wetlands , Washington State Wetland Rating System for Eastern Washington, Wetland Mitigation in Washington State Part 1: Agency Policies and Guidance, Wetland Mitigation in Washington State Part 1: Agency Policies and Guidance, Dr. Robert Quinn, EWU, Dr. Mike Folsom, EWU, Larry Dawes, qualified wetland professionals with the City of Spokane, Jeremy Sikes, Dept of Ecology, wetlands professional, City of Spokane Developer Services staff Kris Becker, PE.

14. Protection standards for one Critical Area often provide protection for one or more other Critical Areas.

15. Critical Areas may also be protected by other actions by the City of Spokane, such as stormwater management standards, critical area restoration, and public education; and from other regulations, such as the Forest Practices Act, the Shoreline Management Act, and the State Environmental Policy Act.

- Forest Practices Act
- Municipal Water Law
- Shoreline Management Act
 - Chapter 11.15 SMC Shoreline Master Program
- State Environmental Policy Act (SEPA)
- Division D Citywide Standards SMC

based on channel width, fish use, and perennial or intermittent status and WAC 365-190-080(5) grants [the City] the flexibility to make decisions in the context of local circumstances, and specifically excuses local jurisdictions from being required to protect "all individuals of all species at all time."

18. **Frequently Flooded Areas:** Flood hazard areas are subject to periodic inundation that results in loss of life and property, health, and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare, these flood losses are caused by development in areas prone to inundation that increase flood heights and velocities, and when inadequately anchored, damage uses in other areas. Uses that are inadequately floodproofed, elevated, or otherwise protected from flood damage also contribute to flood loss, floodplain and stream connectivity are major elements in maintaining healthy riparian habitat and off-channel habitats for the survival of fish species and conveyance of floodwaters. If river, floodplains and other systems are not viewed holistically as biological, geomorphological units, this can lead to serious degradation of habitat and increase flood hazards, which, in turn, can contribute to listing of various fish species as threatened or endangered and result in extraordinary public expenditures for flood protection and relief, and frequently flooded areas, including the 100-year floodplain and the floodway, are commonly mapped on flood insurance maps, often known as Flood Insurance Rate Maps, or FIRMs.
19. **Geologically Hazardous Areas:** Geologically hazardous areas are subject to periodic geological events that results in loss of life and property, health, and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare, geologic hazards may be exacerbated by development and human activity in sensitive areas, and impacts resulting from geologic hazards may be reduced by limiting development and human activity within or adjacent to the geologic hazard, and some geologic hazards may be intensified during periods of consistent or heavy rainfall that results in ground saturation or surface water drainage flows.
20. **Wetlands:** Wetlands and streams are environmentally sensitive and serve numerous natural functions and values. These functions include wildlife and fisheries habitat, water quality protection, flood protection, shoreline stabilization, stream flow, and ground water recharge and discharge. In many situations these functions cannot be adequately replicated or replaced, the scientific literature supports in the inclusion of protective buffers from wetlands to provide sediment control and nutrient inputs to wetlands, and to protect important wetland functions, wetlands are identified and rated according to the *Washington State Wetland Identification and Delineation Manual*, and *Washington State Wetland Rating System* (Eastern and Western Washington), prepared by the Department of Ecology, the scientific literature supports protective buffers ranging from 25 to 300 feet of relatively intact native vegetation to adequately protect wetland functions and values, appropriate wetland mitigation ratios – ratios of areas of

these ordinances. These ordinances should be updated as new and better science is developed.

3. The environmental review and determination for the proposed amendments to the regulations fulfilled the requirements and intent of the Spokane Environmental Ordinance and the State Environmental Policy Act.
4. Adoption of these amendments is of public necessity; will benefit the general welfare of the community; constitutes good planning practices; and will not be unduly detrimental to properties within critical areas.
5. Mechanisms to ensure opportunity for public input into the planning process fulfilled legal requirements and the intent and policies of the Plan Commission.
6. The City's Critical Area Ordinances are supported by maps showing designated Critical Areas. It is recognized, however, that some Critical Areas may not be mapped. Mapping shall be for informational purposes only, and the criteria for identification of Critical Areas in the regulations shall prevail.
7. Adoption of these changes will officially amend Chapters 17A.020, 17E.010 and 17E.030 of the SMC, and will repeal certain chapters of the SMC and replace those chapters with new Chapters 17E.020, 17E.040, and 17E.070 SMC.

These findings and conclusions were approved on November 14, 2007

Michael Ekins, President
Spokane Plan Commission

City Council Hearing – Critical Areas Update

November 26, 2007

Floodplain Management - Summary of Substantive Changes

(Frequently Flooded)

Division E Environmental SMC 17E.030

Section	Change
17E.030.010	Statutory Authorization Deleted specific Comp Plan chapter citation; added Shoreline Master Program.
17E.030.030	Purpose Added protection of ecological functions and values to statement.
17E.030.040 (C)	Methods of Reducing Flood Losses Added channel migration zone (CMZ) to areas where alterations are controlled. More applicable to Latah Creek; this is the corridor of variable width that includes the current river plus adjacent area through which the channel has migrated or is likely to migrate within a given timeframe, usually one hundred years.
17E.030.050	General Provisions Added Shoreline Master Program – whichever provides the most stringent restrictions shall prevail.
17E.030.060 (B), (C)(5)	Development Permit (B) Added pre-development conference. (C)(5) Added requirement to complete Critical Areas Checklist. Added Section D title "Fee Processing." Added Section E title "Fee Schedule."
17E.030.080 (A)(4)	Duties of Local Administrator Added review of all development permits for compliance with Shoreline Master Program policies and provisions.
17E.030.090	Variance Procedure Hearing Examiner to consider the relationship of the proposed development to the Shoreline Master Program policies and regulations.
17E.030.100	Variances Added title "Conditions"

SMC 17E.030 Floodplain Management BAS Review Code Provisions Based on BAS

SHAPING SPOKANE VOLUME III, APPENDIX G

	<ul style="list-style-type: none"> • Adequate drainage paths shall be required around structures on slopes to channel water. • Recreational vehicles placed on these sites must be on site for fewer than 180 days, or be fully ready for highway use, on its wheels or jacking system, attached only by quick disconnect systems, and have no permanently attached additions, or, • Meet the requirements stated above and anchoring requirements for mobile homes. <p><i>Essential Public Facilities</i></p> <ul style="list-style-type: none"> • To the extent possible, located outside of special flood hazard areas. • If constructed in a special flood hazard area, the lowest floor must be elevated three feet above the base flood elevation. • Flood proofed and sealed to prevent release or displacement of toxic substances • Have access routes elevated to or above base flood elevations.
<p>The ordinance meets the BAS standards for protecting frequently flooded areas and for inclusion in the review. SMC 17E.030.030 Protection of Ecological Functions and Values added SMC 17E.030.040 Channel Migration Zones are now included in areas where alterations are to be controlled and will be further addressed in the Shoreline Master Program Update. Channel Migration Zones are not a designated critical area but are an integral component of the floodplain. SMC 17E.030.050 Requires SMP compliance. SMC 17E.030.060 Adds pre-development conference and Critical Areas Checklist. SMC 17E.030.080 – Review for compliance with SMP. SMC 17E.030.090 Variances Added consideration of SMP requirements and Riparian habitat is addressed in the Fish and Wildlife Habitat ordinance. The removal of native riparian vegetation will also be addressed in the Shoreline Master Program Update.</p>	

ORDINANCE NO C-34150

An ordinance relating to floodplain management; amending SMC sections 17E.030.010, 17E.030.030, 17E.030.040, 17E.030.050, 17E.030.060, 17E.030.080, 17E.030.090 and 17E.030.100.

WHEREAS, the Washington State Legislature enacted the Growth Management Act (GMA) in 1990. GMA requires cities to adopt development regulations that protect critical areas that are required to be designated under RCW 36.70A.170; and

WHEREAS, GMA also requires cities to periodically review and update development regulations protecting critical areas, and establishes December 1, 2007 as a deadline by which the City of Spokane is required to take action updating its critical area protection ordinances; and

WHEREAS, critical areas that must be designated under GMA include wetlands, areas with a critical recharging effect on aquifers used for potable water, frequently flooded areas, geologically hazardous areas, and fish and wildlife habitat conservation areas ("Critical Areas"); and

WHEREAS, the City Council adopted the Critical Areas Report in 1994. The Report documented the classification, designation, and regulation of wetlands, frequently flooded areas and aquifer recharge areas through the existence of previously adopted ordinances. The Report also classified, designated and proposed a regulation scheme for fish and wildlife habitat conservation areas and geologically hazardous areas; and

WHEREAS, the City of Spokane adopted a Comprehensive Plan in May of 2001 that complies with the requirements of the Growth Management Act, including designated Critical Areas and providing policy support for the protection of Critical Areas in Chapter 9, Natural Environments; and

WHEREAS, the Critical Area Updates referenced herein are consistent with the Comprehensive Plan, and were developed in accordance with an adopted public participation process including an Aquifer Protection and Wetlands Review Group; and

WHEREAS, development may result in cumulative impacts to those functions and values of Critical Areas that contribute to and are necessary for a healthy natural environment and perceived quality of life; and

WHEREAS, the development of residences, businesses, shopping areas and other structures, and the clearing of land for accommodation of livestock and for such development all have the potential of adversely and significantly impacting the functions and values of Critical Areas; and

WHEREAS, the unwise development of resource lands or areas susceptible to natural hazards may lead to inefficient use of limited public resources, jeopardize environmental resource functions and values, subject persons and property to unsafe conditions, and affect the perceived quality of life; and

WHEREAS, it is more costly to remedy the loss of Critical Area functions and values than to conserve and protect them from loss or degradation; and

WHEREAS, in determining what Critical Areas are to be afforded a particular degree of protection, the City of Spokane has evaluated a wide range of the best available science with respect to the Critical Areas to make informed decisions that meet the intent of the Growth Management Act and that are also reflective of local needs; and

WHEREAS, the sources of this best available science that were evaluated and included in Critical Areas Ordinances are Yakima County's Review of Best Available Science For Inclusion in Critical Areas Ordinance Update, October 2006, King County Best Available Science, Volume 1, Review of Science Literature, Thurston County, Flood and Channel Migration Hazard Areas, Department of Ecology – Floods Section, Department of Homeland Security (FEMA); and

WHEREAS, Critical Areas may also be protected by other actions by the City of Spokane, including, but not limited to, stormwater management standards, critical area restoration, and public education; and from other regulations, such as the Forest Practices Act, the Shoreline Management Act, and the State Environmental Policy Act; and

WHEREAS, Flood hazard areas are subject to periodic inundation that results in loss of life and property, health, and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare, these flood losses are caused by development in areas prone to inundation that increase flood heights and velocities, and when inadequately anchored, damage uses in other areas. Uses that are inadequately floodproofed, elevated, or otherwise protected from flood damage also contribute to flood loss, floodplain and stream connectivity are major elements in maintaining healthy riparian habitat and off-channel habitats for the survival of fish species and conveyance of floodwaters. If river, floodplains and other systems are not viewed holistically as biological, geomorphological units, this can lead to serious degradation of habitat and increase flood hazards, which, in turn, can contribute to listing of various fish species as threatened or endangered and result in extraordinary public expenditures for flood protection and relief, and frequently flooded areas, including the 100-year floodplain and the floodway, are commonly mapped on flood insurance maps, often known as Flood Insurance Rate Maps, or FIRMs; and

WHEREAS, a SEPA Environmental Checklist was completed and a Determination of Non-Significance issued, with notice published in the Spokesman-Review on October 5, 2007; and

WHEREAS, an Open House was held on October 11, 2007. Notice of the Open House was mailed to property owners with vacant and or redevelopable land in potential Critical Areas. Notice was also published in the Spokesman-Review; and

WHEREAS, notice of City of Spokane Plan Commission Public Hearing on the amendments to five Critical Areas Ordinances was published in the Spokesman-Review on October 15, 2007; and

WHEREAS, the Plan Commission held a public hearing and took testimony on the Critical Areas Ordinances on October 24 and completed deliberations November 14, 2007; and

WHEREAS, the review and subsequent amendments to Floodplain Management will promote the protection of the City's Critical Areas, as required by the Growth Management Act; and

WHEREAS, working with state agencies, consulting with other jurisdictions, consulting with qualified local scientific experts, and researching the latest reports and studies, the City has incorporated the "best available science" into the amendments of these ordinances. These ordinances should be updated as new and better science is developed; and

WHEREAS, the environmental review and determination for the proposed amendments to the regulations fulfilled the requirements and intent of the Spokane Environmental Ordinance and the State Environmental Policy Act; and

WHEREAS, adoption of these amendments is of public necessity; will benefit the general welfare of the community; constitutes good planning practices; and will not be unduly detrimental to properties within critical areas; and

WHEREAS, mechanisms to ensure opportunity for public input into the planning process fulfilled legal requirements and the intent and policies of the Plan Commission; and

WHEREAS, the City's Critical Area Ordinances are supported by maps showing designated Critical Areas. It is recognized, however, that some Critical Areas may not be mapped. Mapping shall be for informational purposes only, and the criteria for identification of Critical Areas in the regulations shall prevail; and

WHEREAS, adoption of these changes will officially amend Chapter 17E.030 of the SMC; -- Now, Therefore:

The City of Spokane does ordain:

Section 1. That SMC section 17E.030.010 is amended to read as follows:

17E.030.010 Statutory Authorization

The legislature of the State of Washington has delegated the responsibility to local governmental units to adopt regulations designed to promote the public health, safety and general welfare of its citizenry. Specific laws related to the following provisions per chapter 86.16 RCW et seq. and chapter 43.21 RCW et seq., as well as the City's comprehensive plan, ~~((Chapter 9 Natural Environment,))~~ and shoreline master program. Adoption of this chapter constitutes compliance with the standards for participation in the National Flood Insurance Program.

Section 2. That SMC section 17E.030.030 is amended to read as follows:

17E.030.030 Purpose

It is the purpose of this chapter to promote the public health, safety and general welfare, ~~((and))~~ to minimize to the extent allowed by these provisions public and private losses due to flood conditions in specific areas, and to protect ecological systems, and their functions and values, by provisions designed:

- A. to protect human life and health;
- B. to minimize expenditures of public money and costly flood control projects;
- C. to minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- D. to minimize prolonged business interruptions;
- E. to minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in areas subject to flooding;
- F. to help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood blight areas;
- G. to adopt procedures to notify potential buyers that property is in a special flood hazard area; and

- H. to encourage those who occupy areas of special flood hazard to assume responsibility for their actions.

Section 3. That SMC section 17E.030.040 is amended to read as follows:

17E.030.040 Method of Reducing Flood Losses

In order to accomplish its purpose, this chapter includes methods and provisions for:

- A. restricting or prohibiting uses which are dangerous to health, safety and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities;
- B. requiring that uses vulnerable to floods, including facilities that serve such uses, be protected against flood damage at the time of initial construction;
- C. controlling the alteration of natural floodplains, natural drainage ways, stream channels, channel migration zones, and natural protective barriers that help accommodate or channel flood waters;
- D. controlling filling, grading, dredging and other development which may increase flood damage; and
- E. preventing or regulating the construction of flood barriers that unnaturally divert flood waters or which may increase flood hazards in other areas.

Section 4. That SMC section 17E.030.050 is amended to read as follows:

17E.030.050 General Provisions

In all areas of special flood hazards, the following standards are required:

- A. This chapter shall apply to all areas of special flood hazards within the jurisdiction of the City.
- B. Basis for Establishing the Areas of Special Flood Hazard.
The areas of special flood hazards identified by the Federal Insurance Administration in a scientific and engineering report entitled "The Flood Insurance Study for the City of Spokane" dated February 1980, and any revisions thereto, with accompanying Flood Insurance Rate Maps (FIRM), and any revisions thereto, are hereby adopted by reference and declared to be a part of this chapter. The procedure for map corrections is set forth in the federal code of regulations, 44 CFR Part 70. The Flood Insurance Study and Flood Insurance Rate Maps are on file in the city planning department.

- C. Abrogation and Greater Restrictions.
This chapter is not intended to repeal, abrogate, or impair any existing easements, covenants or deed restrictions. However, where this chapter and another SMC section, shoreline master program and any revisions thereto, easement, covenant, or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.
- D. Interpretation.
In the interpretation and application of this chapter, all provisions shall be:
1. considered as minimum requirements;
 2. liberally construed in favor of the governing body; and
 3. deemed neither to limit nor repeal any other powers granted under the laws of the State of Washington.
- E. Warning and Disclaimer of Liability.
The degree of flood protection required by this chapter is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by manmade or natural causes. This chapter does not imply that land outside of the areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damages. This chapter does not create liability on the part of the city, any officer or employee thereof, or the Federal Insurance Administration, for any flood damages that result from reliance on this chapter or any administrative decision lawfully made hereunder.

Section 5. That SMC section 17E.030.060 is amended to read as follows:

17E.030.060 Establishment of Development Permit

- A. Development Permit Required.
A development permit shall be obtained before construction or development begins within any area of special flood hazard established in SMC 17E.030.050(B). The permit shall be for all structures including manufactured homes, as defined in chapter 17A.020 SMC and for all development, including fill and other activities also as defined in chapter 17A.020 SMC.
- B. A pre-development conference as set forth in chapter 17G.060 SMC is required for all development proposed in areas identified as potential Critical Areas within the City of Spokane, including areas of special flood hazard established in SMC 17E.030.050(B).

((B-)) C. Application for Floodplain Development Permit.

Application for a floodplain development permit shall be made on forms furnished by the city and may include, but not be limited to, plans in duplicate drawn to scale showing the nature, location, dimensions and elevations of the area in question: existing or proposed structures, fill, storage of materials, drainage facilities and the location of foregoing. Specifically, the following information is required:

1. Elevation in relation to mean sea level, of the lowest floor (including basement) of all structures.
2. Elevation in relation to mean sea level to which any structure has been floodproofed.
3. Certification by a registered professional engineer or architect that the floodproofing methods for any nonresidential structure meet the floodproofing criteria in SMC 17E.030.130.
4. Description of the extent to which a watercourse will be altered or relocated as a result of proposed development.
5. A completed critical areas checklist as established at chapter 17G.060 SMC.

((5-)) 6. A completed environmental checklist, unless the local administrator as designated in SMC 17E.030.070 has determined that the project is categorically exempt from chapter 17E.050 SMC; and

((6-)) 7. All studies, reports and information required by reviewing departments or agencies to fully disclose potential environmental impacts of the proposal. These studies are required to demonstrate acceptance by the applicable department or agencies prior to the application being certified complete.

((G-)) D. Fee Processing

Floodplain development permits shall be processed as set forth in chapter 17G.060 SMC.

((D-)) E. Fee Schedule

The fees for processing a floodplain development permit are set forth in SMC 8.02.066(F) SMC.

Section 6. That SMC section 17E.030.080 is amended to read as follows:

17E.030.080 Duties and Responsibilities of the Local Administrator

- A. The duties and responsibilities of the local administrator shall include, but not be limited to, review of:
1. all development permits to determine that the permit requirements of this chapter have been satisfied, all necessary information has been provided for a determination that the application is counter complete;
 2. all development permits to determine that all necessary permits have been obtained from those federal, state or local governmental agencies from which prior approval is required; and
 3. all development permits to determine if the proposed development is located in the floodway. If located in the floodway, assure that the encroachment provisions of SMC 17E.050.160 are met.
 4. all development permits to determine if the proposed development complies with the policies, provisions, and requirements of the shoreline master program, as now or hereafter amended.
- B. Use of Other Base Flood Data in "A" Zones.
When base flood elevation data has not been provided (A Zones) in accordance with SMC 17E.030.050, the local administrator shall obtain, review and reasonably utilize any base flood elevation and floodway data available from a federal, state or other source, in order to administer SMC 17E.050.140 and SMC 17E.050.160.
- C. Information to be Obtained and Maintained.
1. Where base flood elevation data is provided through the Flood Insurance Study, FIRM, or required as in subsection (B) of this section, the local administrator shall record, when provided by the applicant, the actual elevation (in relation to mean sea level) of the lowest floor (including basement) of all new or substantially improved structures, and whether or not the structure contains a basement.
 2. For all new or substantially improved flood proofed structures where base flood elevation data is provided through the Flood Insurance Study, FIRM, or as required in subsection above, the local administrator shall:
 - a. obtain and record the elevation (in relation to mean sea level) to which the structure was flood proofed; and
 - b. maintain the flood proofing certifications required in SMC 17E.030.060.

3. The local administrator shall maintain for public inspection all records pertaining to the provisions of this chapter.
- D. Alteration of Watercourses.
1. The local administrator shall notify adjacent communities and the Washington state department of ecology prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Insurance Administration.
 2. The local administrator shall require that maintenance is provided within the altered or relocated portion of the watercourse so that the flood carrying capacity is not diminished.
- E. Interpretation of FIRM Boundaries.
- The local administrator shall make interpretations where needed, as to exact location of the boundaries of the areas of special flood hazards (for example, where there appears to be a conflict between a mapped boundary and actual field conditions). The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in SMC 17E.030.090.

Section 7. That SMC section 17E.030.090 is amended to read as follows:

17E.030.090 Variance Procedure – Hearing Examiner

- A. The hearing examiner shall hear and decide appeals and requests for variances from the requirements of this chapter.
- B. The hearing examiner shall hear and decide appeals when it is alleged there is an error in any requirement, decision, or determination made by the director in the enforcement or administration of this chapter.
- C. Those aggrieved by the decision of the hearing examiner, or any taxpayer, may appeal such decisions to the Spokane County Superior Court, as provided in chapter 17G.060 SMC.
- D. In passing upon such applications, the hearing examiner shall consider all technical evaluations, all relevant factors, standards specified in other sections of this chapter, and:
 1. the danger that materials may be swept onto other lands to the injury of others;

2. the danger to life and property due to flooding or erosion damage;
 3. the susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
 4. the importance of the services provided by the proposed facility to the community;
 5. the necessity to the facility of a waterfront location, where applicable;
 6. the availability of alternative locations for the proposed use which are not subject to flooding or erosion damage;
 7. the compatibility of the proposed use with existing and anticipated development;
 8. the relationship of the proposed use to the comprehensive plan and floodplain management program for that area;
 9. the safety of access to the property in times of flood for ordinary and emergency vehicles;
 10. the expected heights, velocity, duration, rate of rise and sediment transport of the flood waters and the effects of wave action, if applicable, expected at the site;
 11. the costs of providing governmental services during and after flood conditions, including maintenance and repair of public utilities and facilities such as sewer, gas, electrical and water systems, and streets and bridges; ((and));
 12. the cumulative impact of additional requests of like actions in the area; and
 13. the relationship of the proposed development to the shoreline master program policies and regulations as now or hereafter amended, and floodplain management for that area.
- E. Upon consideration of the factors of subsection (D) of this section and the purposes of this chapter, the hearing examiner may attach such conditions to the granting of the variances as he/she deems necessary to further the purposes of this chapter.
- F. The local administrator shall maintain the records of all appeal actions and report any variances to the Federal Insurance Administration upon request.

Section 8. That SMC section 17E.030.100 is amended to read as follows:

17E.030.100 Variances

A. Conditions

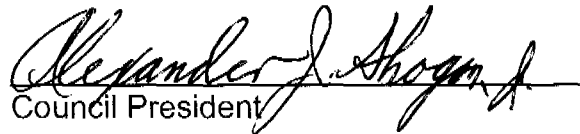
A variance shall be granted if conditions set forth in SMC 17G.060.170(E) are met. In addition to SMC 17G.060.170(E), the following additional conditions should be considered:

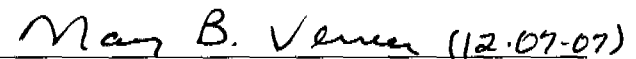
1. Generally, the only condition under which a variance from the elevation standard is issued, is for new construction and substantial improvements to be erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, providing the decision criteria in this section have been fully considered. As the lot size increases the technical justification required for issuing the variance increases. Variances from the standards and conditions of this chapter are not allowed for residential uses in the floodway except for historic buildings as allowed by this section.
2. Variances may be issued for the reconstruction, rehabilitation, or restoration of structures listed on the National Register of Historic Places, the State Inventory of Historic Places, or the Spokane Register of Historic Places, without regard to the procedures set forth in this section.
3. Variances will not be issued within a designated floodway if any increase in flood levels during the base flood discharge would result.
4. Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
5. Variances will only be issued upon:
 - a. a showing of good and sufficient cause;
 - b. a determination that failure to grant the variance would result in exceptional hardship to the applicant;
 - c. a determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud or victimization of the public or conflict with existing local laws or ordinances.
6. Variances as interpreted in the National Flood Insurance Program are based on the general zoning law principle that they pertain to a physical

piece of property; they are not personal in nature and do not pertain to the structure, its inhabitants, economic or financial circumstances. They primarily address small lots in densely populated residential neighborhoods.

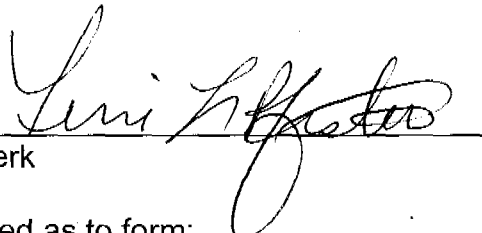
7. Variances may be issued for nonresidential buildings in very limited circumstances to allow a lesser degree of floodproofing than watertight or dry-floodproofing, where it can be determined that such action will have low damage potential, complies with all other variance criteria except this section, and otherwise complies with SMC 17E.030.050.
 8. Any applicant to whom a variance is granted shall be given written notice that the structure will be permitted to be built with a lowest floor elevation below the base flood elevation and that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation.
- B. Variances will be processed as set forth in Table 17G.060-3.
- C. The fees for processing a variance are set forth in SMC 8.02.066(G).

ADOPTED BY THE CITY COUNCIL ON DECEMBER 03, 2007.



Council President


Mayor, Mary B. Verner (Date)

Attest:


City Clerk

Approved as to form:


Assistant City Attorney

01-08-08

EFFECTIVE DATE

RECEIVED
12 10 07
CITY CLERK'S OFFICE
SPOKANE, WA



Bab111507

RECEIVED

NOV 14 2007

AgSht01-18-2006

AGENDA SHEET FOR COUNCIL MEETING OF: November 26, 2007

CITY CLERK'S OFFICE
SPOKANE, WASubmitting Dept.
Development IncentivesContact Person/Phone No.
Melissa Eadie X6069Council Sponsor
Councilman French**ADMINISTRATIVE SESSION**

- ☐ Contract
- ☐ Report
- ☐ Claims

LEGISLATIVE SESSION

- ☐ Emergency Ord
- ☐ Resolution
- ☐ Final Reading Ord
- ☒ First Reading Ord
- ☐ Special Consideration
- ☐ Hearing

CITY PRIORITY

- ☐ Communications
- ☐ Economic Development
- ☒ Growth Management
- ☐ Human Services
- ☐ Neighborhoods
- ☐ Public Safety
- ☐ Quality Service Delivery
- ☐ Racial Equity/Cultural Diversity
- ☐ Rebuild/Maintain Infrastructure

CLERK'S FILE

RENEWS

CROSS REF

ENG

BID

REQUISITION

STANDING COMMITTEES

(Date of Notification)

- ☐ Finance
- ☐ Neighborhoods
- ☐ Planning/Community & Econ Dev
- ☐ Public Safety
- ☐ Public Works

Neighborhood/Commission/Committee Notified:

Community Assembly, Plan Commission

Action Taken: Plan Commission: Recommended for approval

AGENDA**WORDING:**

(If contract, include the term.)

An ordinance relating to geologically hazardous areas; repealing SMC sections 11.19.2520, 11.19.2522; 11.19.2524, 11.19.2526, 11.19.2528, and 11.19.2530, and adopting a new chapter 17E.040 to division E of title 17 of the Spokane Municipal Code.

BACKGROUND:

See Attached.

(Attach additional sheet if necessary)

RECOMMENDATION: Approve**Fiscal Impact:** N/A**Budget Account:** o N/A☐ Expenditure: \$

#

☐ Revenue: \$

#

☒ Budget Neutral

ATTACHMENTS: Include in Packets: Final Draft Ordinance, Summary of Changes, Best Available Science Review, Cover Letter, Plan Commission Findings and Conclusions, Geologically Hazardous and Erodible Soils Maps.

On file for Review in Office of City Clerk:

SIGNATURES:

Department Head

Division Director

Finance

Legal

Deputy Mayor for Mayor

Council President

DISTRIBUTION:

Planning – K Pelton

Planning – P Hall

Development Incentives – M Eadie

COUNCIL ACTION:

* See Council Action Memorandum dated 12/14/07

FIRST READING OF THE
ABOVE ORDINANCE WAS HELD ON

November 26, 2007
AND FURTHER ACTION WAS DEFERRED

CITY CLERK

PASSED BY
SPOKANE CITY COUNCIL:

DEC 03 2007

CITY CLERK

C34149

SHAPING SPOKANE VOLUME III, APPENDIX G
AGENDA SHEET FOR COUNCIL MEETING OF: November 26, 2007



Submitting Dept.
 Development Incentives

Contact Person/Phone No.
 Melissa Eadie X6069

Council Sponsor
 Councilman French

ADMINISTRATIVE SESSION

- ☐ Contract
- ☐ Report
- ☐ Claims

LEGISLATIVE SESSION

- ☐ Emergency Ord
- ☐ Resolution
- ☐ Final Reading Ord
- ☒ First Reading Ord
- ☐ Special Consideration
- ☐ Hearing

CITY PRIORITY

- ☐ Communications
- ☐ Economic Development
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- ☐ Human Services
- ☐ Neighborhoods
- ☐ Public Safety
- ☐ Quality Service Delivery
- ☐ Racial Equity/Cultural Diversity
- ☐ Rebuild/Maintain Infrastructure

CLERK'S FILE _____

RENEWS _____

CROSS REF _____

ENG _____

BID _____

REQUISITION _____

STANDING COMMITTEES

(Date of Notification)

- ☐ Finance _____
- ☐ Neighborhoods _____
- ☐ Planning/Community & Econ Dev _____

- ☐ Public Safety _____
- ☐ Public Works _____

Neighborhood/Commission/Committee Notified:

Community Assembly, Plan Commission

Action Taken: Plan Commission: Recommended for approval

BACKGROUND:

(Attach additional sheet if necessary)

The GMA identifies five Critical Areas that must be identified, designated, and protected (RCW 36.70A.030): Wetlands, areas with a critical recharging effect on aquifers used for potable water, frequently flooded areas, geologically hazardous areas, and fish and wildlife habitat conservation areas. In 2002 the GMA was amended to require jurisdictions to take legislative action to review and, if needed, revise their comprehensive plans and development regulations to ensure the plans and regulations comply with the requirements of the act according to a seven-year cycle. The City of Spokane is required to take legislative action by December 1, 2007. In addition, GMA requires that Best Available Science be included in the review of critical areas regulations (RCW 36.70A.172). The public participation process approved by Council in April 2007 was followed, and Best Available Science included in the review that results in the proposed amendments.

RECEIVED
NOV 16 2007
CITY CLERK'S OFFICE
SPOKANE, WA

November 15, 2007

City Council President Joe Shogan and City Council Members
808 W. Spokane Falls Blvd.
6th Floor City Hall
Spokane, WA 99201

Re: Critical Areas Update – Final Draft Ordinances for Adoption by City Council.

Dear City Council President Joe Shogan and City Council Members:

The Plan Commission has completed its review of the 2007 Critical Area Ordinances Update and forwards the proposed amendments to the City Council. The review and update process followed the public participation process approved by Council in April 2007 along with seven workshops covering the five ordinances. The review included recommended changes to other code sections implementing the critical area regulation amendments. The Plan Commission hearing was held October 24, 2007. After receiving oral and written testimony, the Plan Commission completed deliberations on November 14, 2007. The proposed amendments to these ordinances are forwarded to you with the unanimous approval of the Plan Commission

The early, continuous, and informed participation of citizens in planning processes is a goal and requirement of the Growth Management Act (GMA) (RCW 36.70A.020, .035 and .140). Critical Area identification, designation, and protection are required by GMA and include Geologically Hazardous, Fish and Wildlife Habitat Conservation, Critical Aquifer Recharge, Frequently Flooded, and Wetland Areas. The Plan Commission recognizes that efforts to inform and engage the public, local experts, and state agencies contributed to the positive dialogue and comments during the hearing process.

The Plan Commission also takes this opportunity to note that a recurring theme of the review and update was the administration and implementation of the Critical Area Ordinances (CAO). Many questions were asked of staff regarding public education, departmental processes, and enforcement of the codes protecting critical areas, lives, and public and private property. It was clear to the Plan Commission that updating the regulations would likely be one of several steps in carrying out the intent of the Growth Management Act for critical areas.

The Plan Commission recommends approval of the amendments to the Spokane Municipal Code at 17E.010 Protection of Aquifer Recharge Areas, 17E.020 Spokane Fish and Wildlife Habitat Conservation Areas, 17E.030 Floodplain Management, 17E.040 Spokane Geologically Hazardous Areas, 17E.070 Spokane Wetlands Protection, and 17A.020 Definitions.

Sincerely,

Michael Ekins
President, City Plan Commission

SPOKANE PLAN COMMISSION FINDINGS AND CONCLUSIONS

Development Regulation Amendments

Critical Area Ordinances

Spokane Municipal Code 17E.010 Aquifer Protection, 17E.020 Fish and Wildlife Habitat Conservation Areas, 17E.030 Floodplain Management, 17E.040 Geological Hazards, 17E.070 Wetlands Protection

November 14, 2007

The City Plan Commission recommends adoption of ordinances amending Spokane Municipal Code (SMC) Chapter 17E.010 relating to protection of aquifer recharge areas and SMC 17E.030 relating to frequently flooded areas, and repealing certain SMC sections and adopting a new Chapter 17E.020 relating to protection of fish and wildlife conservation areas, adopting a new Chapter 17E.040 relating to geologically hazardous areas, and adopting a new chapter 17E.070 relating to protection of wetlands. Hereinafter, the foregoing ordinances will be collectively referred to as the "Critical Areas Ordinances". The Plan Commission recommends adoption of the ordinance amending SMC Chapter 17A.020 relating to definitions for the Unified Development Code.

In making this recommendation, the Commission makes the following findings and conclusions:

FINDINGS:

1. The Washington State Legislature enacted the Growth Management Act (GMA) in 1990. GMA requires cities to adopt development regulations that protect critical areas that are required to be designated under RCW 36.70A.170.
2. GMA also requires cities to periodically review and update development regulations protecting critical areas, and establishes December 1, 2007 as a deadline by which the City of Spokane is required to take action updating its critical area protection ordinances.
3. Critical areas that must be designated under GMA include wetlands, areas with a critical recharging effect on aquifers used for potable water, frequently flooded areas, geologically hazardous areas, and fish and wildlife habitat conservation areas ("Critical Areas").
4. The City Council adopted the Critical Areas Report in 1994. The Report documented the classification, designation, and regulation of wetlands, frequently flooded areas and aquifer recharge areas through the existence of previously adopted ordinances. The Report also classified, designated and proposed a regulation scheme for fish and wildlife habitat conservation areas and geologically hazardous areas.
5. The City of Spokane adopted a Comprehensive Plan in May of 2001 that complies with the requirements of the Growth Management Act, including

designated Critical Areas and providing policy support for the protection of Critical Areas in Chapter 9, Natural Environments.

6. The Critical Area Updates referenced herein above (Critical Area Ordinances, Division E Environmental Standards) are consistent with the Comprehensive Plan, and were developed in accordance with an adopted public participation process including an Aquifer Protection and Wetlands Review Group.
7. The proposed amendments to SMC Chapter 17A.020 Definitions are necessary to provide clarity for the public and administrators of specialized terminology associated with the Critical Area Ordinances.
8. Development may result in cumulative impacts to those functions and values of Critical Areas that contribute to and are necessary for a healthy natural environment and perceived quality of life.
9. The development of residences, businesses, shopping areas and other structures, and the clearing of land for accommodation of livestock and for such development all have the potential of adversely and significantly impacting the functions and values of Critical Areas.
10. The unwise development of resource lands or areas susceptible to natural hazards may lead to inefficient use of limited public resources, jeopardize environmental resource functions and values, subject persons and property to unsafe conditions, and affect the perceived quality of life.
11. It is more costly to remedy the loss of Critical Area functions and values than to conserve and protect them from loss or degradation.
12. In determining what Critical Areas are to be afforded a particular degree of protection, the City of Spokane has evaluated a wide range of the best available science with respect to the Critical Areas to make informed decisions that meet the intent of the Growth Management Act and that are also reflective of local needs.
13. The sources of this best available science that were evaluated and included in Critical Areas Ordinances are listed below:
 - **Aquifer Recharge Areas:** General Policies U.S. Code Title 42- The Public Health and Welfare, Chapter 82- Solid Waste Disposal, Subchapter IX- Regulation of Underground Storage Tanks, Spokane Aquifer Water Quality Management Plan, Spokane County, Washington "208" Program, County Engineers Office & The Spokane Regional Planning Conference, Critical Aquifer Recharge Areas-Guidance Document, Washington State Department of Ecology, Washington's Source Water Assessment Program, Washington State Department of Health, Office of Drinking Water, Washington State Department of Health, Division of Environmental Health, Stormwater Management Manual for Eastern Washington, Washington State Department of Ecology, Water Quality Program,

International Fire Code, Spokane Aquifer Joint Board (SAJB) and Aquifer Protection Council 2007 Wellhead Protection Update, Bi-State Spokane-Rathdrum Aquifer Study, City of Spokane Environmental Programs, Washington State Department of Ecology.

- **Fish & Wildlife Habitat Conservation Areas:** Washington State Forest Practices Rules, Washington State Department of Natural Resources, stream typing, timber harvest and riparian zones, Habitat, and Priority habitat and Species Washington State Department of Fish and Wildlife, Habitat Protection Toolkit, Washington Environmental Council, Streamnet Pacific Northwest Interactive Mapper.
- **Frequently Flooded Areas:** Yakima County's Review of Best Available Science For Inclusion in Critical Areas Ordinance Update, October 2006, King County Best Available Science, Volume 1, Review of Science Literature, Thurston County, Flood and Channel Migration Hazard Areas, Department of Ecology – Floods Section, Department of Homeland Security (FEMA).
- **Geologically Hazardous Areas:** Dr Richard Orndorff, EWU consulted for review of this ordinance and mapping of geohazards in the City of Spokane, U.S. Department of Agriculture Natural resources Conservation Service.
- **Wetlands:** Wetlands in Washington State, Volume 1: A Synthesis of the Science, Wetlands in Washington State, Volume 2: Guidance for Protecting and Managing Wetlands , Washington State Wetland Rating System for Eastern Washington, Wetland Mitigation in Washington State Part 1: Agency Policies and Guidance, Wetland Mitigation in Washington State Part 1: Agency Policies and Guidance, Dr. Robert Quinn, EWU, Dr. Mike Folsom, EWU, Larry Dawes, qualified wetland professionals with the City of Spokane, Jeremy Sikes, Dept of Ecology, wetlands professional, City of Spokane Developer Services staff Kris Becker, PE.

14. Protection standards for one Critical Area often provide protection for one or more other Critical Areas.

15. Critical Areas may also be protected by other actions by the City of Spokane, such as stormwater management standards, critical area restoration, and public education; and from other regulations, such as the Forest Practices Act, the Shoreline Management Act, and the State Environmental Policy Act.

- Forest Practices Act
- Municipal Water Law
- Shoreline Management Act
 - Chapter 11.15 SMC Shoreline Master Program
- State Environmental Policy Act (SEPA)
- Division D Citywide Standards SMC
 - Concurrency Certification, Stormwater Facilities Stormwater Facilities
- Division E Environmental Standards SMC
 - Aquifer Protection, Fish & Wildlife Conservation, Floodplain Management, SEPA, Wetland
- Division G Administration and Procedures SMC

- Building and Construction Permits, Land Use Application Procedures, Planned Unit Developments, Subdivisions
- Division I Enforcement
- Chapter 1 SMC
 - General Provisions, Civil Infraction System
- Chapter 13 SMC Public Utilities and Services
- Water Stewardship Program

16. Aquifer Recharge Areas: WAC 365-190-080 defines well head protection areas, sole source aquifers, special protection areas, and other areas that are susceptible or vulnerable to ground water contamination as areas with a critical recharging effect on aquifers used for potable water (also referred to as critical aquifer recharge areas), the City of Spokane's drinking water comes from groundwater supplies, once ground water is contaminated it is difficult, costly, and sometimes impossible to clean up, preventing groundwater contamination is necessary to avoid exorbitant costs, hardships, and potential physical harm to people, *Guidance Document for Establishment of Critical Aquifer Recharge Area Ordinances*, by the Department of Ecology, 2000, includes scientific recommendations for protecting groundwater, including limiting certain uses and the intensity of development in critical aquifer recharge areas, and potable water is an essential life-sustaining element.

17. Fish and Wildlife Habitat Conservation Areas: Fish and wildlife habitat conservation areas perform many important physical and biological functions that benefit the City of Spokane and its residents, including but not limited to: maintaining species diversity and genetic diversity; providing opportunities for food, cover, nesting, breeding and movement for fish and wildlife; serving as areas for recreation, education and scientific study and aesthetic appreciation; helping to maintain air and water quality; controlling erosion; and providing neighborhood separation and visual diversity within urban areas, wetlands and streams are environmentally sensitive and serve numerous natural functions and values. These functions include wildlife and fisheries habitat, water quality protection, flood protection, shoreline stabilization, stream flow, and ground water recharge and discharge. In many situations these functions cannot be adequately replicated or replaced, the scientific literature supports in the inclusion of protective buffers from streams to provide sediment control, nutrient inputs to downstream waters, large woody debris, and other functions important to riparian areas, the Washington Department of Fish and Wildlife has prepared management recommendations for the preservation of priority habitat and species, which are based on the best available science, and include, in some instances, recommended protective buffer distances, the Department of Natural Resources has classified watercourses according to two stream-typing systems based on channel width, fish use, and perennial or intermittent status and WAC 365-190-080(5) grants the City of Spokane the flexibility to make decisions in the context of local circumstances, and specifically excuses local jurisdictions from being required to protect "all individuals of all species at all time."

18. Frequently Flooded Areas: Flood hazard areas are subject to periodic inundation that results in loss of life and property, health, and safety hazards,

disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare, these flood losses are caused by development in areas prone to inundation that increase flood heights and velocities, and when inadequately anchored, damage uses in other areas. Uses that are inadequately floodproofed, elevated, or otherwise protected from flood damage also contribute to flood loss, floodplain and stream connectivity are major elements in maintaining healthy riparian habitat and off-channel habitats for the survival of fish species and conveyance of floodwaters. If river, floodplains and other systems are not viewed holistically as biological, geomorphological units, this can lead to serious degradation of habitat and increase flood hazards, which, in turn, can contribute to listing of various fish species as threatened or endangered and result in extraordinary public expenditures for flood protection and relief, and frequently flooded areas, including the 100-year floodplain and the floodway, are commonly mapped on flood insurance maps, often known as Flood Insurance Rate Maps, or FIRMs.

19. **Geologically Hazardous Areas:** Geologically hazardous areas are subject to periodic geological events that results in loss of life and property, health, and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare, geologic hazards may be exacerbated by development and human activity in sensitive areas, and impacts resulting from geologic hazards may be reduced by limiting development and human activity within or adjacent to the geologic hazard, and some geologic hazards may be intensified during periods of consistent or heavy rainfall that results in ground saturation or surface water drainage flows.
20. **Wetlands:** Wetlands and streams are environmentally sensitive and serve numerous natural functions and values. These functions include wildlife and fisheries habitat, water quality protection, flood protection, shoreline stabilization, stream flow, and ground water recharge and discharge. In many situations these functions cannot be adequately replicated or replaced, the scientific literature supports in the inclusion of protective buffers from wetlands to provide sediment control and nutrient inputs to wetlands, and to protect important wetland functions, wetlands are identified and rated according to the *Washington State Wetland Identification and Delineation Manual*, and *Washington State Wetland Rating System* (Eastern and Western Washington), prepared by the Department of Ecology, the scientific literature supports protective buffers ranging from 25 to 300 feet of relatively intact native vegetation to adequately protect wetland functions and values, appropriate wetland mitigation ratios – ratios of areas of wetland replacement and enhancement to that altered or destroyed – are established in *Wetland Mitigation Replacement Ratios: Defining Equivalency*, published by the Department of Ecology, 1992.
21. A SEPA Environmental Checklist was completed and a Determination of Non-Significance issued, with notice published in the *Spokesman-Review* on October 5, 2007.

22. An Open House was held on October 11, 2007. Notice of the Open House was mailed to property owners with vacant and or redevelopable land in potential Critical Areas. Notice was also published in the Spokesman-Review.
23. Notice of City of Spokane Plan Commission Public Hearing on the amendments to five Critical Areas Ordinances was published in the Spokesman-Review on October 15, 2007.
24. The Plan Commission held a public hearing and took testimony on the Critical Areas Ordinances on October 24.
25. Comments submitted to the written record from Washington Department of Fish & Wildlife, Futurewise, and Avista Corporation were addressed individually by staff and the Plan Commission. Response to comments resulted in the addition of priority species to 17E.020 per WDFW, and a structural setback from a critical area buffer to 17E.020 and 17E.070 based on BAS protection of buffers as a Best Management Practice (BMP) as commented by WDFW, Futurewise, and Dept. of Ecology. All other comments and responses are recorded as addressed by the regulations, required by BAS, or requirements of other regulatory agencies.
26. The Plan Commission completed deliberations on 17E.010, 17E.030, and 17E.040 SMC on November 6, 2007. The Plan Commission completed deliberations on 17E.020 and 17E.070 SMC on November 14, 2007. The Plan Commission recommends all five Critical Area Ordinance amendments go forward to the City Council with changes as deliberated.
27. The U.S. Constitution prohibits the taking of private property without just compensation.

CONCLUSIONS:

1. The review and subsequent amendments to Aquifer Protection, Fish and Wildlife Habitat conservation Areas, Floodplain Management, Geologically Hazardous Areas, and Wetlands Protection regulations will promote the protection of the City's Critical Areas, as required by the Growth Management Act.
2. Working with state agencies, consulting with other jurisdictions, consulting with qualified local scientific experts, and researching the latest reports and studies, the City has incorporated the "best available science" into the amendments of these ordinances. These ordinances should be updated as new and better science is developed.
3. The environmental review and determination for the proposed amendments to the regulations fulfilled the requirements and intent of the Spokane Environmental Ordinance and the State Environmental Policy Act.

4. Adoption of these amendments is of public necessity; will benefit the general welfare of the community; constitutes good planning practices; and will not be unduly detrimental to properties within critical areas.
5. Mechanisms to ensure opportunity for public input into the planning process fulfilled legal requirements and the intent and policies of the Plan Commission.
6. The City's Critical Area Ordinances are supported by maps showing designated Critical Areas. It is recognized, however, that some Critical Areas may not be mapped. Mapping shall be for informational purposes only, and the criteria for identification of Critical Areas in the regulations shall prevail.
7. Adoption of these changes will officially amend Chapters 17A.020, 17E.010 and 17E.030 of the SMC, and will repeal certain chapters of the SMC and replace those chapters with new Chapters 17E.020, 17E.040, and 17E.070 SMC.

These findings and conclusions were approved on November 14, 2007

Michael Ekins, President
Spokane Plan Commission

City Council Hearing – Critical Areas Update

November 26, 2007

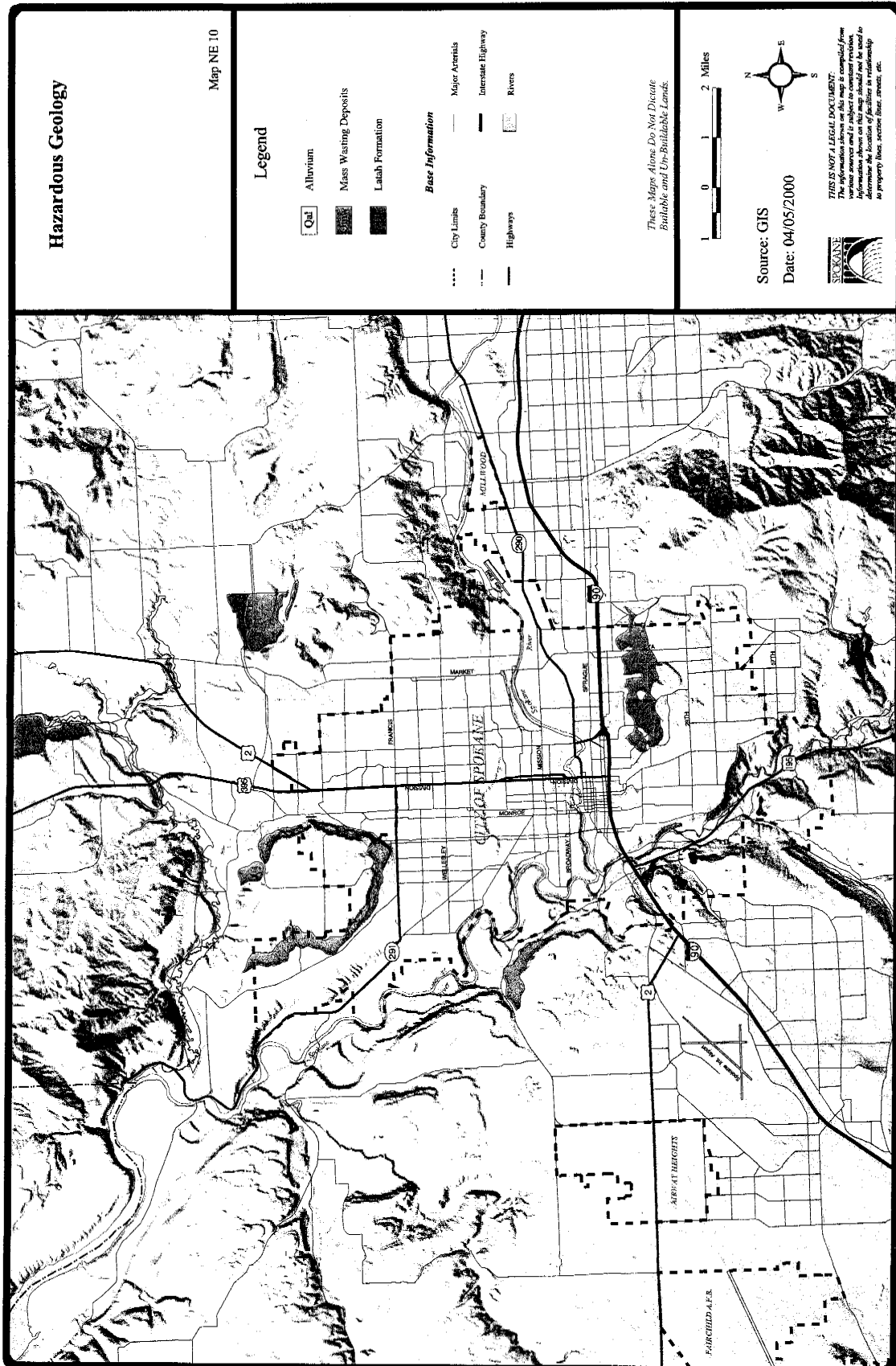
Geologically Hazardous Areas - Summary of Substantive Changes Division E Environmental SMC 17E.040

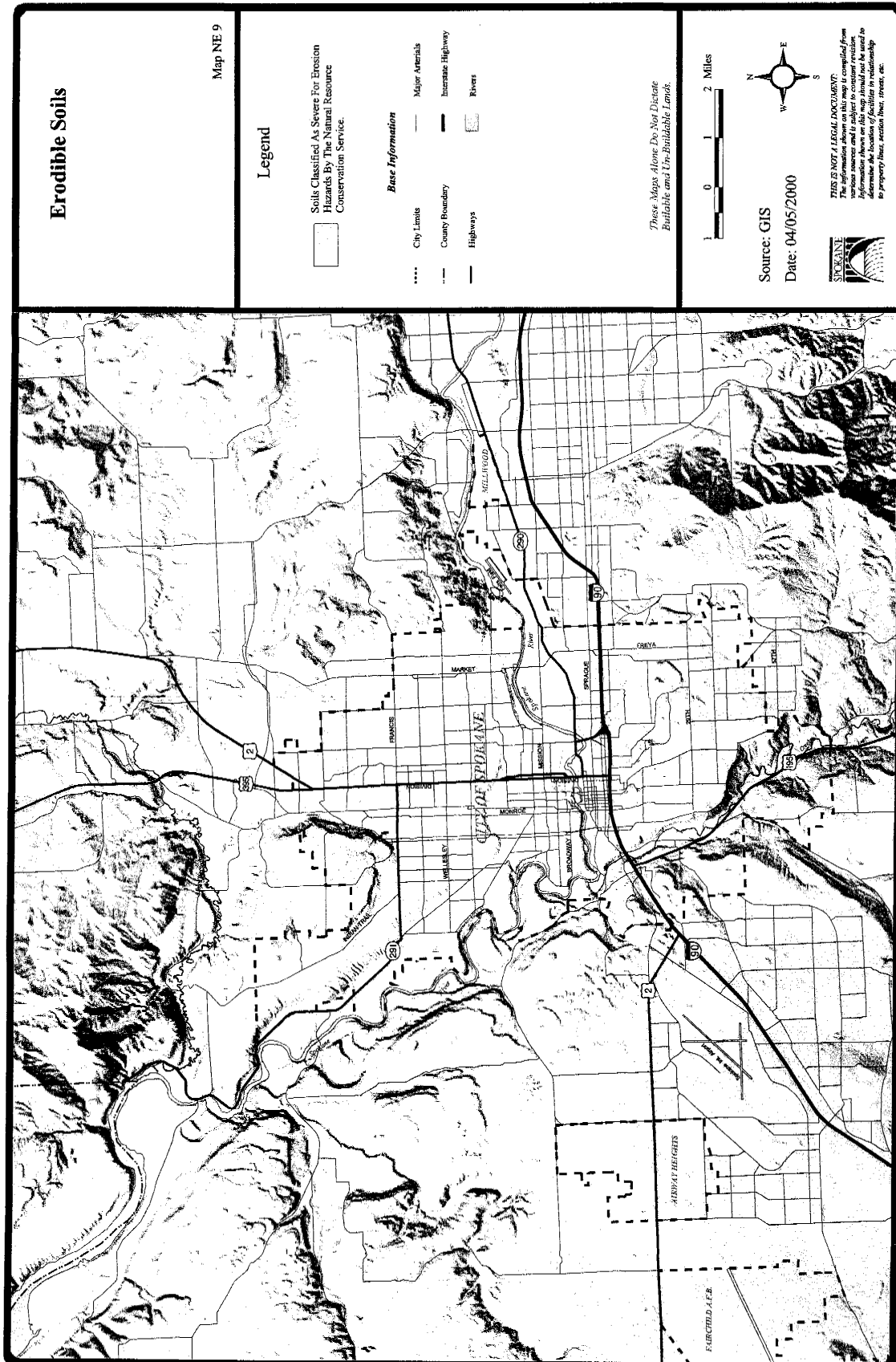
Repeal of 11.19.2520, move to Title 17, Unified Development Code

Section	Change
Definitions	Definitions moved to 17A.020 Unified Development Code.
17E.040.010	Title and Purpose - Added Comprehensive Plan, Shoreline, and protection of function and values sequencing and Best Available Science requirement. No net loss of function and values permitted.
17E.040.020	Applicability Added “associated buffer.” Buffers for landslide areas are a change to this ordinance.
17E.040.030	Geologically Hazardous Areas Added erosion hazard areas such as “cutbanks,” channel migration zone (CMZ), and more specific descriptions of steep slope characteristics.
17E.040.040	Identification and Mapping – Added “criteria shall prevail over mapping” statement and other characteristics associated with development that creates geo-hazard conditions. These include hydraulic changes, steep-cuts, resource extraction.
17E.040.050	Regulated Activities - Added language that prohibits any permit or authorization without first complying with all the requirements of this regulation, including clearing and grading of less than 50 cubic yards. Added a Critical Areas Checklist requirement.
17E.040.060	Reasonable Use Exception - Added mitigation sequencing requirement. Applicant must first demonstrate: avoid the impact, reduce the impact, compensate for the impact. Complete definition found in 17A.020.
17E.040.070	Exemptions – Added emergency activities, limit reconstruction or remodeling to no further intrusion into critical area or buffer, and require best management practices. Added Director discretionary waiver from requirement of a full geohazard evaluation and mitigation plan based on findings that the critical area is unlikely to be further degraded provided no construction activity has taken place.
17E.040.080	Application Submittal - Added pre-development conference. Critical areas Checklist. Added application requirements, Director’s discretion allowed for these requirements.
17E.040.090	Geohazard Evaluation and Mitigation Plan – Added intent statement: “The intent of the geohazard evaluation and preliminary report is to produce a site design that protects life, property, critical area functions, and values, through sensitivity to the limitations and hazards inherent in the site’s geologic setting.” Added requirement to minimize impact from site investigations, and to restore disturbed areas. Added requirements to identify and retain vegetation, document for relationship to slope integrity, vegetation management plans.
17E.040.100	General Performance Standards - Added emphasis on no adverse impacts to adjacent sites or critical areas, safety factor for landslide conditions, minimize alterations to natural contour of slopes, design to minimize impervious lot coverage, point discharges prohibited onto or upstream from erosion or landslide areas (with exceptions and conditions).

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17E.040.110	Protective Measures – Added buffer requirement for erosion and landslide areas, reduction or increase with findings from Director.
17E.040.120	Subdivision and Dedication Notice – Added statement that land wholly within a landslide hazard area or its buffer may not be subdivided. Limits on land partially within the hazard area. Notice on plat indicating lots or portions of lots that are affected by geologic hazards.
17E.040.130	Incentives and Stewardship - Added new language describing on-site density transfer, removed transfer of development rights, added stewardship options and resources.
17E.040.140 - 190	Administration, Violation, Enforcement - Restructured enforcement and penalties section. More explicit and stronger language for procedures, actions, and penalties. New sections.





ORDINANCE NO. C-34149

An ordinance relating to geologically hazardous areas; repealing SMC sections 11.19.2520, 11.19.2522; 11.19.2524, 11.19.2526, 11.19.2528, 11.19.2530, and adopting a new chapter 17E.040 to division E of title 17 of the Spokane Municipal Code.

Whereas, the Growth Management Act (GMA) requires cities to adopt development regulations that protect critical areas that are required to be designated under RCW 36.70A.170 ("Critical Area Ordinance"); and

Whereas, GMA also requires cities to periodically review and update their Critical Area Ordinances and establishes December 1, 2007 as a deadline by which the City of Spokane is required to take action updating its Critical Area Ordinances ("Critical Area Updates"); and

Whereas, critical areas that must be designated under GMA include wetlands, areas with a critical recharging effect on aquifers used for potable water, frequently flooded areas, geologically hazardous areas, and fish and wildlife habitat conservation areas ("Critical Areas"); and

Whereas, in developing its Critical Area Updates, and as outlined in the findings and conclusions of the Plan Commission, dated November 14, 2007 ("Plan Commission Findings and Recommendations"), the City has worked with state agencies, consulted with other jurisdictions, consulted with qualified local scientific experts, and researched the latest reports and studies and has included the best available science, consistent with local needs, to protect the functions and values of Critical Areas, as required by GMA; and

Whereas, the sources of this best available science that were evaluated and included in Critical Area Updates included Dr Richard Orndorff, EWU, who was consulted for review of this ordinance and mapping of geohazards in the City of Spokane, and the U.S. Department of Agriculture Natural resources Conservation Service; and

Whereas, the unwise development of areas susceptible to natural hazards may lead to inefficient use of limited public resources, jeopardize environmental resource functions and values, subject persons and property to unsafe conditions, and affect the perceived quality of life; and

Whereas, geologically hazardous areas are subject to periodic geological events that results in loss of life and property, health, and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare, geologic hazards may be exacerbated by development and human

activity in sensitive areas, and impacts resulting from geologic hazards may be reduced by limiting development and human activity within or adjacent to the geologic hazard, and some geologic hazards may be intensified during periods of consistent or heavy rainfall that results in ground saturation or surface water drainage flows; and

Whereas, a SEPA Environmental Checklist was completed and a Determination of Non-Significance issued, with notice published in the Spokesman-Review on October 5, 2007; and

Whereas, an Open House was held on October 11, 2007. Notice of the Open House was mailed to property owners with vacant and or redevelopable land in potential Critical Areas. Notice was also published in the Spokesman-Review; and

Whereas, notice of City of Spokane Plan Commission Public Hearing on the Critical Area Updates was published in the Spokesman-Review on October 15, 2007; and

Whereas, the Plan Commission held a public hearing and took testimony on the Critical Area Updates on October 24 and completed deliberations November 14, 2007; and

Whereas, the environmental review and determination for the Critical Area Updates fulfilled the requirements and intent of the Spokane Environmental Ordinance and the State Environmental Policy Act; and

Whereas, adoption of the Critical Area Updates is of public necessity; will protect public health, safety, and welfare; constitutes good planning practices; and will not be unduly detrimental to properties within Critical Areas; and

Whereas, mechanisms to ensure opportunity for public input into the planning process fulfilled legal requirements and the intent and policies of the Plan Commission,
-- Now, Therefore,

The City of Spokane does ordain:

Section 1. That SMC section 11.19.2520 is repealed.

Section 2. That SMC section 11.19.2522 is repealed.

Section 3. That SMC section 11.19.2524 is repealed.

Section 4. That SMC section 11.19.2526 is repealed.

Section 5. That SMC section 11.19.2528 is repealed.

Section 6. That SMC section 11.19.2530 is repealed.

Section 7. That the findings and conclusions of the Plan Commission, dated November 14, 2007 and the preambles to this Ordinance are adopted as the City Council's findings of fact in support of this Ordinance.

Section 8. That there is adopted a new chapter 17E.040 to division E of title 17 of the Spokane Municipal Code to read as follows:

**Chapter 17E.040
Geologically Hazardous Areas**

Sections:

17E.040.010	Title and Purpose
17E.040.020	Applicability
17E.040.030	Geologically Hazardous Areas
17E.040.040	Identification, Designation, and Mapping of Critical Areas
17E.040.050	Regulated Activities
17E.040.060	Reasonable Use Exception
17E.040.070	Exemptions
17E.040.080	Application Submittal Requirements
17E.040.090	Geohazard Evaluation and Mitigation Plan
17E.040.100	General Performance Standards
17E.040.110	Protective Measures
17E.040.120	Subdivision and Dedication Notice
17E.040.130	Incentives and Stewardship Options
17E.040.140	Administration
17E.040.150	Violations
17E.040.160	Authority to enforce

17E.040.010 Title and Purpose.

- A. This chapter shall be known and may be cited as the "Spokane Geologically Hazardous Areas Code."
- B. This chapter is based on and implements the City of Spokane Comprehensive Plan and shoreline master program, as amended from time to time. The purpose of this chapter is to protect the public health, safety, and welfare, by regulating development and other activities in geologically hazardous areas, and not to create or otherwise establish or designate any particular person, or class, or group of persons who will or should be especially protected or assisted by the terms or provisions of this chapter. The provisions of this chapter shall be liberally construed to carry out effectively its purpose and if any provisions of this chapter conflict with other regulations, ordinances, or other authorities, that which is most restrictive shall apply.

- C. Geologically hazardous areas pose a threat to the health and safety of citizens when incompatible commercial, residential, or industrial development is sited in areas of significant geological hazard. Development should be discouraged in geologically hazardous areas unless it can be demonstrated that said hazard areas can be developed consistent with public health or safety. Geologically hazardous areas should be used as open space, recreational, rangeland, forest, wildlife habitat, and other appropriate uses unless adverse effects caused by development can be mitigated through innovative land use management techniques as established in the unified development code. The intent of these regulations is to avoid, or in appropriate circumstances, to minimize, rectify, reduce, or compensate for impacts arising from land development and other activities in geologically hazardous areas. In addition, the intent of these regulations is to recognize that property rights and public services are an essential component of our legal and economic environment. Where such rights and public services are seriously compromised by the regulations contained in this chapter, impacts may be permitted provided there is appropriate mitigation.
- D. It is expressly the purpose of this chapter to protect the health, safety and welfare of the general public including public and private property, and the functions and values of ecological systems.
- E. Geotechnical reports, mitigation plans and decisions to alter geologically hazardous areas shall rely on the best available science (BAS) to protect the functions and values and must give special consideration to conservation or protection measures necessary to preserve or enhance anadromous fish and their habitat. Best available science is that scientific information applicable to geologically hazardous areas prepared by local, state, or federal natural resource agencies, a qualified scientific professional, or team of qualified scientific professionals that is consistent with criteria established in WAC 365-195-900 through WAC 365-195-925.

17E.040.020 Applicability.

- A. This chapter shall apply to all activities and development occurring in a geologically hazardous area and associated buffers as defined in this chapter. Property located in a geologically hazardous area and/or associated buffer is subject to both its zoning classification regulations and to the additional requirements imposed under this chapter. In any case where there are differences between the provisions of the underlying zone and this chapter, the provisions of this chapter shall apply.
- B. Geologically hazardous areas are those areas that because of their susceptibility to erosion, sliding, earthquake, or other geological events, are not suited to the siting of commercial, industrial, or residential development consistent with public health and/or safety concerns. All areas within the City meeting this definition are hereby designated critical areas and are subject to the provisions of this chapter.

- C. No action shall be undertaken by any person that results in the alteration of geologically hazardous areas as defined in this chapter except in conformance with this chapter. Uses and activities are allowed in geologically hazardous areas only if:
1. The use or activity is in compliance with the requirements of this chapter.
 2. The use or activity is in compliance with all other applicable provisions of the Spokane Municipal Code.

17E.040.030 Geologically Hazardous Areas.

Geologically hazardous areas shall include both erosion and landslide hazard areas and be determined by the following characteristics:

- A. Erosion hazard areas are susceptible to severe erosion and may require mitigation measures, engineering solutions, or restrictions to development to protect public safety. Erosion hazard areas are defined as "at least those identified by the U.S. Department of Agriculture Natural Resource Conservation Service (NRCS) as having a severe rill and interrill erosion hazard." The NRCS has compiled a table that identifies all soils in the City of Spokane having a severe rill or interrill erosion hazard. This Building Site Development Water Erosion Hazard Table and associated map will be used to classify erosion hazard areas. Erosion hazard areas are also defined as those cutbank areas within a river or stream meander that area highly susceptible to bank carving. A variety of techniques may be used to identify cutbanks along the outside banks or river and stream meanders. Erosion also occurs through the slow process of channel migration. The Channel Migration Zone (CMZ) is the area where the active channel of a stream is prone to movement over time. Channel migration is usually found along a small percentage of the entire stream network length; however effective management of ecological functions in the CMZ is critical to reduce flood hazards, erosion, and habitat loss, and to avoid the need for future shoreline stabilization.
- B. Landslide hazard areas are potentially subject to landslides based on a combination of geologic, topographic, and hydrologic factors. These include areas susceptible to landslides because of any combination of bedrock, soil, slope, structure, hydrology, or other factors. Classifications of landslide hazard areas include:
1. Slopes greater than eighty percent subject to rockfall during seismic shaking.
 2. Any area with a slope of thirty percent or greater.
 3. Areas with all three of the following characteristics: slopes greater than fifteen percent, steep hillsides intersecting permeable sediment overlying

- an impermeable sediment or bedrock, and evidence of perennial or intermittent springs or ground water seepage.
4. Slopes that are parallel or sub-parallel to planes of weakness (such as bedding-planes, joint systems, and fault planes) in subsurface materials.
 5. Areas of previous failures identified by the NRCS as having a severe limitation for building site development.
 6. Areas of previous failures designated on Department of Natural Resources (DNR) maps as landslides.
 7. Areas potentially unstable as a result of bank carving and erosion or areas located in a canyon or on an active alluvial fan subject to inundation by debris flows or catastrophic flooding.
 8. Areas of the Latah formation (sedimentary layers of clay interlain between basalt flows) that are subject to landslides.
 9. Areas of uncompacted fill.
 10. Sloped areas exhibiting recent erosion or mass-wasting landslide activity such as gullies, piping, and surfaces devoid of all vegetation.
 11. Sloped areas greater than fifteen percent with previous levels of development that may have changed sloped stability. Slope characteristics may have changed due to removal of vegetation, the removal and disturbance of soil or a change in surface geology. and modification to underlying geology. Slopes may also experience increased water content and corresponding increase in weight and change in soil friction characteristics due to increased irrigation.
 12. Sloped areas exhibiting high rates of creep as evidenced by trees with curved trunks, fence posts angled downslope, or retaining walls that are angled downslope or broken.
- C. The City of Spokane is not in an area of severe risk for seismic hazards; therefore, no designation of these areas is warranted at this time. All building activity is subject to the provisions of the International Building Code which provides structural safeguards to reduce the risks from seismic activity.
- D. Other geological hazard areas include volcanic and mine hazards. Initial research and investigation has determined that no mine hazards exist in the City of Spokane. In the past, the city has been impacted by volcanic ash, but this is not considered a geological hazard and does not warrant classification or designation for the purpose of this chapter.

17E.040.040 Identification, Designation, and Mapping of Critical Areas.

Data sources are available from the City of Spokane that are used in the mapping of the characteristics for geologically hazardous areas. The existing map sources provide a general level of information and are not intended to pinpoint geologic hazards on individual sites or properties. In addition, there may be areas not designated on the City of Spokane maps that exhibit the characteristics of geologically hazardous areas. It is the intent of this chapter to require all areas which meet the classification characteristics of geologically hazardous areas to meet the requirements of this section. The City will maintain a collection of potential geologically hazardous area inventory maps for purposes of providing information on the general location of geologically hazardous areas. Use of the maps shall be for informational purposes only. Lands that meet the classification characteristics for erosion and landslide hazard areas are mapped. In the event that any of the geologically hazardous designations shown on the city maps conflict with the criteria set forth in this chapter, the criteria shall prevail. The geologically hazardous areas maps shall be updated as more accurate information becomes available to aid the public and project reviewers. Classification characteristics are identified as follows:

- A. Soil characteristics are identified as those areas containing soils which according to the Natural Resource Conservation Service (NRCS) Classification System may experience severe to very severe erosion based on a formula, which is based on several factors including rainfall, slope, soil erodibility, and other factors. Landslide hazard areas are based on a combination of geologic, topographic (slope), and hydraulic factors and have a high susceptibility to landslides.
- B. Geologic characteristics are areas identified and described by the Washington State Department of Natural Resources and include:
 - 1. Alluvium
 - 2. Landslide deposits
 - 3. Latah formation
- C. Topographic characteristics include areas within the City of Spokane with severe site topography or slopes of thirty percent or greater and have a severe potential for erosion and/or landslide hazards.
- D. Other characteristics such as hydraulic features including surface and groundwater conditions and the hydraulic changes resulting from a development proposal. Uncompacted fill-areas or steep-cuts as a result of site grading, construction activities or resource extraction.

A. Regulated Uses and Activities Geologically Hazardous Areas.

1. For the purposes of this chapter, the City of Spokane may restrict the regulated uses and activities that lie within a geologically hazardous area through the application of the performance standards contained in the Spokane Municipal Code.
2. In cases where differences in regulations occur because of critical areas and associated buffers, the regulation that provides the greatest degree of protection shall apply.
3. The City shall not approve any permit or otherwise issue any authorization to alter the condition of any land, water, or vegetation, or to construct or alter any structure or improvement in, over, or on a potential geologically hazardous area or associated buffer, without first ensuring compliance with the requirements of this chapter, including, but not limited to, those permits listed at chapter 17G.060 SMC and as follows:
 - a. All clearing and grading, including fifty cubic yards or less of earth materials.

Note: Other uses and activities not listed are assumed to be subject to this ordinance unless otherwise determined by the director.

B. Critical Areas Checklist Required

A critical areas checklist must be submitted at the time of application for all regulated activities proposed in geologically hazardous areas and associated buffers as required at chapter 17G.060 SMC.

17E.040.060 Reasonable Use Exception

- A. When the director determines that the following criteria are met, development activity that would otherwise be prohibited under this chapter may be allowed, subject to conditions that follow mitigation sequencing as defined in chapter 17A.020 SMC:
1. Applications of this chapter would deny all economically viable use of the property;
 2. The proposed impact to the critical area is the minimum necessary to allow for reasonable and economically viable use of the property;
 3. There is no reasonably viable economic use with less impact on the critical area;

4. The requested use or activity will not result in any damage to other property and will not threaten the public health, safety or welfare on or off the property;
 5. The inability of the applicant to derive economically viable use is not the result of actions by the applicant in subdividing the property, adjusting boundary lines, or other land use activity thereby creating the undevelopable conditions after the effective date of this chapter.
- B. An application for a reasonable use exception under this subsection may be made only as a component of a specific proposed development.
 - C. The applicant for an exemption shall provide all information requested by the director and demonstrate that the work qualifies for the reasonable use exception. The director shall determine whether work is exempt and may impose conditions on the work to protect environmentally critical areas and buffers or other property.
 - D. City agencies taking the action under any subsection of this section do not need to make an application to the director provided that, if no application is made, they shall comply with all provisions of this section, make all determinations required to be made by the director, including required conditions, and shall maintain records documenting compliance with all provisions.
 - E. All activities pursued under this section shall be undertaken using best management practices; the applicant shall maintain records documenting compliance with this section.
 - F. The applicant shall pay a fee as determined by the director, which may cover mailing and processing.
 - G. The director shall include (1) findings on each of the criteria listed in subsection A of this section, (2) the approved location and limits of the work, and (3) shall require specific mitigation measures for impacts to all critical areas and related buffers before, during, and after construction. The written decision shall be mailed to the applicant and adjacent property owners, including property owners across public rights-of-way or private easements. The written decision shall provide an appeal procedure as contained in chapter 17G.050 SMC. The director should also advise the applicant as to the applicability of transfer of development rights, on-site density transfer, planned unit developments, and any other innovative land use techniques.

17E.040.070 Exemptions

- A. When the director determines that the criteria in this section A are met, those activities are exempt from the provisions of this chapter, except SMC sections 17E.040.020, 17E.040.030, 17E.040.040, and 17E.040.140.

1. Existing and ongoing agricultural activities are exempt from this chapter. These activities cease to be existing upon the occurrence of either of the following:
 - a. The area has been converted to a nonagricultural use; or
 - b. The area has lain idle more than five years and so long as modifications to the hydrological regime are necessary to resume agricultural activities, unless the idle land is registered in a federal or state soils conservation program.
2. Operation, maintenance or repair of public rights-of-way, legally existing roads, structures or facilities and associated right of way used in the service of the public to provide transportation, electricity, gas, water, telephone, telegraph, telecommunication, sanitary sewer, stormwater treatment and other public utility services are exempt from this chapter. Installation of such structures or facilities in public rights-of-way, dedicated public easements or legally existing roads upon demonstration to the director that there are no practicable and reasonable use alternatives. Operation, maintenance, or repair activities that do not require construction permits, if the activity does not further alter or increase impact to, or encroach further within, the critical area or buffer and there is no increased risk to life or property as a result of the proposed operation, maintenance, or repair. Operation and vegetation management performed in accordance with best management practices that is part of ongoing maintenance of structures, infrastructure, or utilities, provided that such management actions are part of a regular ongoing maintenance, do not expand further into the critical area, are not the result of an expansion of the structure or utility, and do not directly impact endangered species. These ongoing activities are not subject to new or additional mitigation when they do not expand further into the critical area, are not the result of an expansion of the structure or utility, or do not directly impact endangered species. Whenever possible, maintenance activities will be confined to late summer and fall.
3. Work directly related to ending a condition that (a) is an immediate threat to the public health, safety and welfare, or creates an immediate risk of damage to public or private property and (b) requires remedial or preventive action in a timeframe too short to allow compliance with the application provisions of this chapter is exempt from those provisions, provided that the work is the minimum work necessary to end the condition and the work is consistent with the development standards of this chapter to the extent practicable. Once the director determines that the condition no longer meets these criteria, all work is subject to the provisions of this chapter, including but not limited to its application requirements, its development standards, and any requirements for

technical reports and reviews for work that was exempt at the time it was performed.

4. Reconstruction, remodeling or maintenance of existing structures is exempt from this chapter, provided that the new construction or related activity does not further intrude into the critical area and associated buffers.
 5. Other activities such as passive recreation, scientific research, conservation practices, harvesting of wild crops, noxious weed control and pedestrian/bike trails.
- B. All exempt activities shall be undertaken using best management practices; the applicant shall maintain records documenting compliance with this section.
- C. The director may determine, upon submission of specific data, maps, and documentation including a threshold geotechnical evaluation based on field investigation by a qualified geotechnical engineer or technician, that the function or value of the critical area within or adjacent to the project area is unlikely to be degraded according to best available science and issue a "common sense" waiver from the requirement of a full geohazard evaluation and geohazard mitigation plan, provided no construction activity, clearing or grading has taken place. A summary of the analysis and findings shall be included in any staff report or decision on the underlying permit.

17E.040.080 Application Submittal Requirements.

- A. A pre-development conference is required for all regulated activities proposed in geologically hazardous areas and associated buffers per chapter 17G.060 SMC. The pre-development conference is intended to acquaint an applicant with standards, requirements, investigation procedures, best management practice, and potential review procedures prior to making application.
- B. All activities identified in SM section 17E.040.050 shall meet the following application submittal requirements in addition to the application submittal requirements specified in other codes. The director may modify the submittal requirements based upon reasonable documentation, including BAS, needed to ensure compliance with this chapter, provided no construction activity, clearing, or grading has taken place. A written summary of analysis and findings shall be included in any staff report or decision on the underlying permit.
1. **Topographic Survey.** A topographic site plan, prepared and stamped by a State of Washington licensed surveyor, is required for sites that include a geohazard or its buffer. The topographic site plan shall include the following existing physical elements:

- a. Existing topography at two-foot contour intervals on-site, on adjacent lands within twenty-five feet of the site's property lines, and on the full width of abutting public and private rights-of-way and easements;
 - b. Terrain and stormwater-flow characteristics within the site, on adjacent sites within twenty-five feet of the site's property lines, and on the full width of abutting public and private rights-of-way and easements;
 - c. Location of areas with significant amounts of vegetation, and specific location and description of all trees with trunks six inches or greater in diameter measured four feet, six inches above the ground, and noting their species;
 - d. Location and boundaries of all existing site improvements on the site, on adjacent lands within twenty-five feet of the site's property lines, and on the full width of abutting public and private rights-of-way and easements. This shall include the amounts of developmental coverage, including all impervious surfaces (noting total square footage and percentage of site occupied);
 - e. Location of all grading activities in progress, and all natural and artificial drainage control facilities or systems in existence or on adjacent lands on the site, within twenty-five feet of the site's property lines, and in the full width of abutting public and private rights-of-way and easements;
 - f. Location of all existing utilities (water, sewer, gas, electric, phone, cable, etc.), both above and below ground, on the site, on adjacent lands within twenty-five feet of the site's property lines and in the full width of abutting public rights-of-way; and
 - g. Such additional existing physical elements information for the site and surrounding area as required by the director to complete review of a project subject to the standards of this chapter.
2. Additional Site Plan Information. The following site plan information shall also be required for sites that include landslide-prone, flood-prone, riparian corridor, wetland, and steep slope areas or their buffers. Information related to the location and boundaries of critical areas and required buffer delineations shall be prepared by qualified professionals with training and experience in their respective area of expertise as demonstrated to the satisfaction of the director.

- a. Location and boundaries of all critical areas and related buffers on the site and on adjacent lands within twenty-five feet of the site's property lines, noting both total square footage and percentage of site;
 - b. Location and identification of all riparian corridors and wetlands within one hundred feet of the site's property lines;
 - c. Location and boundaries of all proposed site improvements on the site, on adjacent lands within twenty-five feet of the site's property lines, and on the full width of abutting public and private rights-of-way and easements. This shall include the amount of proposed land disturbing activities, including amounts of developmental coverage, impervious surfaces and construction activity areas (noting total square footage and percentage of site occupied);
 - d. Location of all proposed grading activities and all proposed drainage control facilities or systems on the site or on adjacent lands within twenty-five feet of the site's property lines, and on the full width of abutting public and private rights-of-way and easements;
 - e. Location of all proposed utilities (water, sewer, gas, electric, phone, cable, etc.), both above and below ground, on the site, on adjacent lands within twenty-five feet of the site's property lines, in the full width of abutting public rights-of-way, and any proposed extension required to connect to existing utilities, and proposed methods and locations for the proposed development to hook-up to these services; and
 - f. Such additional site plan information related to the proposed development as required by the director to complete review of a project subject to the standards of this chapter.
3. Technical Reports. Technical reports and other studies and submittals, including the geohazard evaluation and mitigation plan described in SMC section 17E.040.090 below, shall be prepared as required by the director detailing soils, geological, hydrological, drainage, plant ecology and botany, and other pertinent site information. The reports, studies and submittals shall be used to condition development to prevent potential harm and to protect the critical nature of the site, adjacent properties, and the drainage basin.

17E.040.090 Geohazard Evaluation and Mitigation Plan.

- A. Geohazard Evaluation, Preliminary Report. The intent of the geohazard evaluation and preliminary report is to produce a site design that protects life, property, critical area functions, and values, through sensitivity to the limitations and hazards inherent in the site's geologic setting. If the director determines that a development proposal contemplates activity or development regulated by this chapter, the applicant shall submit a geohazard evaluation or feasibility report that has been prepared by a qualified geotechnical engineer. The geohazard evaluation shall document the extent and nature of geohazard on the subject property through the use of graphics and text and shall provide mitigating measures and an assessment of geohazards associated with the proposal. A more detailed geohazard mitigation plan may be required at the time of building permit application or actual construction approvals.
1. Work necessary for land use submittal, such as surveys, soil logs, percolation tests, and other related activity shall be minimized to the greatest extent feasible. Examples include core samplings as opposed to mass soil removal. Disturbed areas shall be restored immediately.
 2. Vegetation, including trees, shrubs, and forbs, in the project area and all critical areas addressed in the report shall be documented and evaluated for relation to slope integrity, stability, erosion control. Vegetation management plans shall adhere to best management practices and should identify opportunities to retain or augment existing native vegetation for slope stability, erosion, and sedimentation control.
- B. The International Building Code chapter 16 Structural Design, chapter 18 Soils and Foundations and Appendix J Grading as now or hereafter amended, shall be used when activities and uses are proposed within or partly within geologically hazardous areas.
- C. Geohazard Mitigation Plans. When the director determines that the significant adverse impact of a use or activity located in a geologically hazardous area cannot be mitigated through standards identified in SMC section 17E.040.100, the project proponent shall prepare a geohazard mitigation plan to identify construction standards for the proposal. Geohazard mitigation plans shall conform to City of Spokane guidelines for stormwater management or any subsequent regulation adopted by the City of Spokane providing erosion and landslide protection. A geohazard mitigation plan, prepared by a qualified geotechnical engineer, shall be prepared for all development and activities subject to this chapter within a geologically hazardous area. An analysis of how the plan will affect the subject and adjacent properties, with discussions, recommendations, and mitigation sequencing alternatives shall be included. The following must be included in the analysis:
1. The present stability of the proposed development, stability of the proposed site during construction, stability after all development activity is

completed and a discussion of the relative risks and slide potential relating to adjacent properties during each stage of development.

2. Proposed location of buildings, roadways, and other improvements. Locations shall reflect careful consideration of geohazards and efforts to avoid or minimize impacts.
3. Identify and quarantine trees and other vegetative cover to be retained to provide slope anchoring and stability. Indicate proposed removal of trees and other vegetative cover and potential replacement vegetation to provide anchoring and stability.
4. Grading and earthwork, including compaction and fill material requirements, use of site solids as fill or backfill, imported fill or backfill requirements, height and inclination of both cut and fill slopes and erosion control and wet weather considerations and/or limitations.
5. Foundation and retaining wall design criteria, including bearing layer(s), allowable capacities, minimum width, minimum depth, estimated settlements (total and differential), lateral loads, and other pertinent recommendations.
6. Surface and subsurface drainage requirements and drainage material requirements.
7. Other measures recommended to reduce the risk of slope instability.
8. Any additional information believed to be relevant by the geotechnical engineer preparing the recommendations or requested by the director.

17E.040.100 General Performance Standards

The following standards must be met for all development within geologically hazardous areas and associated buffers as classified in this chapter.

- A. The development shall not increase surface water discharge or sedimentation to adjacent properties beyond pre-development conditions unless approved by the department of engineering services.
- B. The development shall not create adverse impacts on surrounding properties. These impacts include but are not limited to increases or decreases in water characteristics, deposition or removal of earth material, or changes that would harm the growth of existing vegetation.
- C. Alterations to the site shall not adversely impact other critical areas occurring on or off-site.

- D. The proposed development shall not decrease the factor of safety for landslide occurrences below the limits of 1.5 for static conditions and 1.2 for dynamic conditions. Analysis of dynamic conditions shall be based on a minimum horizontal acceleration as established by the current version of the International Building Code.
- E. Structures and improvements shall minimize alterations to the natural contour of the slope, and the foundation shall be tiered where possible to conform to existing topography. Terracing of the land shall be kept to a minimum to preserve natural topography where possible. Structures and improvements shall be located to preserve the most critical portion of the site and its natural landforms and vegetation. All development should be designed to minimize impervious lot coverage.
- F. Roads, walkways, and parking areas shall be designed parallel to topographic contours with consideration given to maintaining consolidated areas of natural topography and vegetation.
- G. Unless otherwise provided or as part of an approved alteration, removal of vegetation from an erosion or landslide hazard area or related buffer shall be prohibited. Removal of vegetation, including trees, shrubs, grasses and forbs shall be the minimum required for construction. Any replanting that occurs shall consist of trees, shrubs, and ground cover that is compatible with the existing surrounding vegetation, meets objectives of erosion prevention and site stabilization, and does not require permanent irrigation for long term survival.
- H. Structures and improvements shall be clustered where possible. Driveways and utility corridors shall be minimized through the use of common access drives and corridors where feasible. Access shall be in the least sensitive area of the site.
- I. Point discharges from surface water facilities and roof drains onto or upstream from an erosion or landslide hazard area shall be prohibited except as follows:
 - 1. conveyed via continuous storm pipe downslope to a point where there are no erosion hazards areas downstream from the discharge;
 - 2. discharged at flow durations matching predeveloped conditions, with adequate energy dissipation, into existing channels that previously conveyed stormwater runoff in the predeveloped state; or
 - 3. dispersed discharge upslope of the steep slope onto a low-gradient undisturbed buffer demonstrated to be adequate to infiltrate all surface and stormwater runoff, and where it can be demonstrated that such discharge will not increase the saturation of the slope;
- J. On-site sewage disposal systems, including drain fields, shall be prohibited within erosion and landslide hazards areas and related buffers when sewer is available within two hundred feet or as otherwise provided by chapter 13.03 SMC.

17E.040.110 Protective Measures

Activities on sites containing erosion or landslide hazards shall meet the following specific requirements:

A. Buffer Requirement.

A buffer shall be established from all edges of landslide hazard areas. The size of the buffer shall be determined by the director to eliminate or minimize the risk of property damage, death, or injury resulting from landslides caused in whole or part by the development, based upon review of and concurrence with a geohazard report prepared by a qualified engineer.

1. The minimum buffer shall be equal to the height of the slope or fifty feet, whichever is greater.
2. The buffer may be reduced to a minimum of ten feet when a qualified engineer demonstrates to the director's satisfaction that the reduction will adequately protect the proposed development, adjacent developments and uses, and the subject critical area.
3. The buffer may be increased where the director determines a larger buffer is necessary to prevent risk of damage to proposed and existing development.

17E.040.120 Subdivision and Dedication Notice.

A. The division of land in landslide hazard areas is subject to the following:

1. Land that is located wholly within a landslide hazard area or its buffer may not be subdivided. Land that is located partially within a landslide hazard area may be subdivided provided that each resulting lot has sufficient buildable area outside of, and will not affect, the landslide hazard.
2. Access roads and utilities may be permitted within the landslide hazard area if the City of Spokane determines that no feasible alternative exists.

B. Dedication Notice

Final subdivisions, short plats, and binding site plans located within geologically hazardous areas shall contain language in the plat dedication to indicate lots or portions of lots that are affected by geologic hazards. In addition, building setback lines may be drawn on lots, parcels and tracts so as to indicate suitable areas for construction of structures or improvements.

17E.040.130 Incentives and Stewardship Options.

A. On-site Density Transfer and Clustering.

1. For residential development proposals on lands containing potential or identified critical areas, including fish and wildlife habitat conservation and/or riparian habitat areas and buffers, the applicant may apply for planned unit development (PUD) under chapter 17G.070 SMC. The maximum number of dwelling units (DU) for a lot or parcel that contains a geologically hazardous area and buffer is determined by the site's zoning and by the density bonus allowed in SMC 17G.070. The provisions of chapter 17G.070 SMC, Planned Unit Developments, shall control the use of density transfer or clustering, Planned Unit Developments, and bonus density. The use of residential density transfer or clustering through the use of planned unit developments (PUDs) including bonus density is encouraged as a means to protect and/or preserve critical areas.
- B. Property Tax and Income Tax Advantages.
1. Property Tax Relief. The Spokane County Assessor shall consider the geologically hazardous areas contained within this chapter when determining the fair market value of land (see RCW 84.40.030).
 2. Federal Income Tax Advantages. There are significant federal income tax advantages that can be realized by an individual or estate for gifts of real property for conservation purposes to local governments or non-profit organizations, such as land trusts. The specific rules on federal income tax deductions can be found in section 170 of the Internal Revenue Code.
- C. Stewardship Options.
1. The Spokane County Conservation District offers stewardship information, classes, and technical assistance to property owners. Programs include shoreline stewardship, forestry, small acreage conservation agriculture, water resources, and soil information.
 2. Spokane County Conservation Futures program, initiated in 1994, is funded by a property tax assessed for each home in the county. This tax money is earmarked solely for the acquisition of property and development rights. These funds acquire lands or future development rights on lands for public use and enjoyment. The conservation areas are defined areas of undeveloped land primarily left in its natural condition. These areas may be used for passive recreational purposes, to create secluded areas, or as buffers in urban areas. Conserved lands include wetlands, farmlands, steep hillsides, river corridors, viewpoints and wildlife habitats and corridors.

17E.040.140 Administration

- A. The department director identified in Chapter 17A.010 SMC ("director") shall administer and interpret the provisions of this chapter, except as specifically provided. The director is authorized to adopt, in accordance with administrative

procedures set by ordinance, such rules as are necessary to implement the requirements of this chapter and to carry out the duties of the director hereunder. Except as otherwise provided in this chapter, the administrative procedures set forth in chapters 17G.010 and 17G.060 SMC shall apply to this chapter.

- B. The director may also consult with other City departments and state and federal agencies as necessary to obtain additional technical and environmental review assistance.
- C. The director shall review and analyze all applications for all permits or approvals subject to this chapter. Such applications shall be approved only after the director is satisfied the applications comply with this chapter.
- D. Every other City department issuing a permit for development on parcels containing a geologically hazardous area or buffer shall require the use of best management practices to prevent impacts to critical areas and buffers and to meet the intent of this chapter. Departments shall require mitigation to address unavoidable impacts. All such City departments shall maintain records documenting compliance with this subsection.
- E. Except as otherwise stipulated in this chapter, the administrative procedures set forth in chapter 17A.010 SMC apply to this chapter.

17E.040.150 Violations

- A. It is a violation of this chapter to fail to comply with any provision of this chapter or with any term of any permit condition or approval issued pursuant to this chapter.
- B. It is a violation of this chapter to fail to comply with any order issued pursuant to this chapter or to remove or deface any sign, notice, complaint or order required by or posted in accordance with this chapter.
- C. It is a violation of this chapter to misrepresent any material fact in any application, on plans, or in any other information submitted to obtain any determination, authorization, permit condition, or approval under this chapter.
- D. It is a violation of this chapter to aid and abet, counsel, encourage, hire, command, induce or otherwise procure another to violate or fail to comply with this chapter.
- E. Violations of this chapter are subject to the penalties set forth in Chapter 1.05 SMC.

17E.040.160 Authority to enforce

- A. The director is authorized to enforce this chapter and may call upon other appropriate City departments to assist in enforcement.
- B. It is the intent of this chapter to place the obligation of complying with its requirements upon the owner, occupier, or other person responsible for the condition of the critical area, buffer, land, premises, building, or structure within the scope of this chapter.
- C. No provision of or term used in this chapter is intended to impose any duty upon the City or any of its officers or employees that would subject them to damages in a civil action.
- D. Nothing contained in this chapter is intended to be nor shall be construed to create or form the basis for liability on the part of the City or its officers, officials, employees or agents for any injury or damage resulting from the failure of any owner of property or land to comply with the provisions of this chapter, or by reason or in consequence of any inspection, notice, order, certificate, permission or approval authorized or issued in connection with the implementation or enforcement of this chapter, or by reason of any action or inaction on the part of the City related in any manner to the enforcement of this chapter by its officers, officials, employees or agents.

ADOPTED BY THE CITY COUNCIL ON DECEMBER 03, 2007.

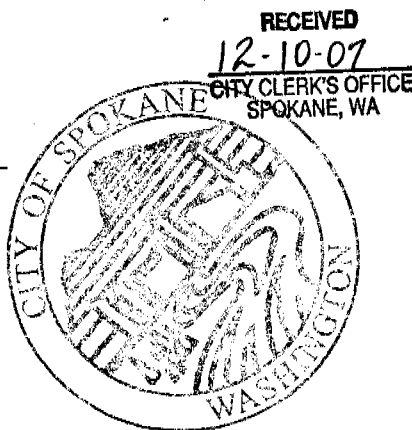
Alexander J. Shogan, Jr.
Council President

Mary B. Verner (12-07-07)
Mayor, Mary B. Verner (Date)

Attest: Leri D. Foster
City Clerk

Approved as to form:
Nicholas J. Pucolo
Assistant City Attorney

01-08-08
EFFECTIVE DATE



Bab112607

NOV 14 2007

AgSht01-18-2006



12/14/07
8:00

AGENDA SHEET FOR COUNCIL MEETING OF: November 26, 2007
CITY CLERK'S OFFICE
SPOKANE, WASubmitting Dept.
Development IncentivesContact Person/Phone No.
Melissa Eadie X6069Council Sponsor
Councilman French**ADMINISTRATIVE SESSION**

- ☐ Contract
- ☐ Report
- ☐ Claims

LEGISLATIVE SESSION

- ☐ Emergency Ord
- ☐ Resolution
- ☐ Final Reading Ord
- ☒ First Reading Ord
- ☐ Special Consideration
- ☐ Hearing

CITY PRIORITY

- ☐ Communications
- ☐ Economic Development
- ☒ Growth Management
- ☐ Human Services
- ☐ Neighborhoods
- ☐ Public Safety
- ☐ Quality Service Delivery
- ☐ Racial Equity/Cultural Diversity
- ☐ Rebuild/Maintain Infrastructure

CLERK'S FILE

RENEWALS

CROSS REF

ENG

BID

REQUISITION

STANDING COMMITTEES

(Date of Notification)

- ☐ Finance
- ☐ Neighborhoods
- ☐ Planning/Community & Econ Dev
- ☐ Public Safety
- ☐ Public Works

Neighborhood/Commission/Committee Notified:

Community Assembly, Plan Commission

Action Taken: Plan Commission: Recommended for approval

AGENDA**WORDING:**

(If contract, include the term.)

An ordinance relating to wetlands protection; repealing SMC sections 11.19.2010, 11.19.3015, 11.19.3016, 11.19.3017, 11.19.3018, 11.19.3019, 11.19.3020, 11.19.3021, 11.19.3022, 11.19.3023, 11.19.3024, 11.19.3025, 11.19.3026, 11.19.3027, 11.19.3028, 11.19.3029, 11.19.3030, 11.19.3031, 11.19.3032, 11.19.3033, 11.19.3034, 11.19.3035, 11.19.3036, 11.19.3037, 11.19.3038, 11.19.3039, 11.19.3040, 11.19.3041, 11.19.3042, 11.19.3043, 11.19.3044, 11.19.3045, 11.19.3046, 11.19.3047, 11.19.3048, 11.19.3049, 11.19.3050, 11.19.3051, 11.19.3052, 11.19.3053, 11.19.3054, 11.19.3055, 11.19.3056, 11.19.3057, 11.19.3058, 11.19.3059, 11.19.3060, 11.19.3061, 11.19.3062, 11.19.3063, 11.19.3064, 11.19.3065, 11.19.3066, 11.19.3067, 11.19.3068, 11.19.3069, 11.19.3070, 11.19.3071, 11.19.3073, 11.19.3075, 11.19.3077, 11.19.3079, 11.19.3081, 11.19.3083, 11.19.3085, 11.19.3087, 11.19.3089, 11.19.3091, 11.19.3093, 11.19.3095 and 11.19.3097; and adopting a new chapter 17E.070 to division E of title 17 of the Spokane Municipal Code.

BACKGROUND:

See Attached.

(Attach additional sheet if necessary)

RECOMMENDATION: Approve**Fiscal Impact:** N/A**Budget Account:** o N/A

- ☐ Expenditure: \$
- ☐ Revenue: \$
- ☒ Budget Neutral

ATTACHMENTS: Include in Packets: Final Draft Ordinance, Summary of Changes, Best Available Science Review, Cover Letter, Plan Commission Findings and Conclusions, Wetlands Map.

On file for Review in Office of City Clerk:

SIGNATURES:

Department Head

Division Director

Finance

Legal

Deputy Mayor for Mayor

Council President
DISTRIBUTION:

Planning – K Pelton
Development Incentives – M Eadie

Planning – P Hall

* See Council Action Memorandum
dated 12/14/07

COUNCIL ACTION:

FIRST READING OF THE
ABOVE ORDINANCE WAS HELD ON

November 26, 2007
AND FURTHER ACTION WAS DEFERRED

CITY CLERK

PASSED BY
SPOKANE CITY COUNCIL:

DEC 03 2007

CITY CLERK

C34148

SHAPING SPOKANE VOLUME III, APPENDIX G
AGENDA SHEET FOR COUNCIL MEETING OF: November 26, 2007



Submitting Dept.
 Development Incentives

Contact Person/Phone No.
 Melissa Eadie X6069

Council Sponsor
 Councilman French

ADMINISTRATIVE SESSION

- ☐ Contract
- ☐ Report
- ☐ Claims

LEGISLATIVE SESSION

- ☐ Emergency Ord
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- ☒ First Reading Ord
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CITY PRIORITY

- ☐ Communications
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- ☒ Growth Management
- ☐ Human Services
- ☐ Neighborhoods
- ☐ Public Safety
- ☐ Quality Service Delivery
- ☐ Racial Equity/Cultural Diversity
- ☐ Rebuild/Maintain Infrastructure

CLERK'S FILE

RENEWS

CROSS REF

ENG

BID

REQUISITION

STANDING COMMITTEES

(Date of Notification)

- ☐ Finance
- ☐ Neighborhoods
- ☐ Planning/Community & Econ Dev

- ☐ Public Safety
- ☐ Public Works

Neighborhood/Commission/Committee Notified:
 Community Assembly, Plan Commission
 Action Taken: Plan Commission: Recommended
 for approval

BACKGROUND:

(Attach additional
 sheet if necessary)

The GMA identifies five Critical Areas that must be identified, designated, and protected (RCW 36.70A.030): Wetlands, areas with a critical recharging effect on aquifers used for potable water, frequently flooded areas, geologically hazardous areas, and fish and wildlife habitat conservation areas. In 2002 the GMA was amended to require jurisdictions to take legislative action to review and, if needed, revise their comprehensive plans and development regulations to ensure the plans and regulations comply with the requirements of the act according to a seven-year cycle. The City of Spokane is required to take legislative action by December 1, 2007. In addition, GMA requires that Best Available Science be included in the review of critical areas regulations (RCW 36.70A.172). The public participation process approved by Council in April 2007 was followed, and Best Available Science included in the review that results in the proposed amendments.

RECEIVED

NOV 16 2007

CITY CLERK'S OFFICE
SPOKANE, WA

November 15, 2007

City Council President Joe Shogan and City Council Members
808 W. Spokane Falls Blvd.
6th Floor City Hall
Spokane, WA 99201

Re: Critical Areas Update – Final Draft Ordinances for Adoption by City Council.

Dear City Council President Joe Shogan and City Council Members:

The Plan Commission has completed its review of the 2007 Critical Area Ordinances Update and forwards the proposed amendments to the City Council. The review and update process followed the public participation process approved by Council in April 2007 along with seven workshops covering the five ordinances. The review included recommended changes to other code sections implementing the critical area regulation amendments. The Plan Commission hearing was held October 24, 2007. After receiving oral and written testimony, the Plan Commission completed deliberations on November 14, 2007. The proposed amendments to these ordinances are forwarded to you with the unanimous approval of the Plan Commission

The early, continuous, and informed participation of citizens in planning processes is a goal and requirement of the Growth Management Act (GMA) (RCW 36.70A.020, .035 and .140). Critical Area identification, designation, and protection are required by GMA and include Geologically Hazardous, Fish and Wildlife Habitat Conservation, Critical Aquifer Recharge, Frequently Flooded, and Wetland Areas. The Plan Commission recognizes that efforts to inform and engage the public, local experts, and state agencies contributed to the positive dialogue and comments during the hearing process.

The Plan Commission also takes this opportunity to note that a recurring theme of the review and update was the administration and implementation of the Critical Area Ordinances (CAO). Many questions were asked of staff regarding public education, departmental processes, and enforcement of the codes protecting critical areas, lives, and public and private property. It was clear to the Plan Commission that updating the regulations would likely be one of several steps in carrying out the intent of the Growth Management Act for critical areas.

The Plan Commission recommends approval of the amendments to the Spokane Municipal Code at 17E.010 Protection of Aquifer Recharge Areas, 17E.020 Spokane Fish and Wildlife Habitat Conservation Areas, 17E.030 Floodplain Management, 17E.040 Spokane Geologically Hazardous Areas, 17E.070 Spokane Wetlands Protection, and 17A.020 Definitions.

Sincerely,

Michael Ekins
President, City Plan Commission

Planning Services Department Mission Statement

We work with citizens and leaders to achieve the community's desired future.

C 3 4 1 4 8

SPOKANE PLAN COMMISSION FINDINGS AND CONCLUSIONS

Development Regulation Amendments

Critical Area Ordinances

Spokane Municipal Code 17E.010 Aquifer Protection, 17E.020 Fish and Wildlife Habitat Conservation Areas, 17E.030 Floodplain Management, 17E.040 Geological Hazards, 17E.070 Wetlands Protection

November 14, 2007

The City Plan Commission recommends adoption of ordinances amending Spokane Municipal Code (SMC) Chapter 17E.010 relating to protection of aquifer recharge areas and SMC 17E.030 relating to frequently flooded areas, and repealing certain SMC sections and adopting a new Chapter 17E.020 relating to protection of fish and wildlife conservation areas, adopting a new Chapter 17E.040 relating to geologically hazardous areas, and adopting a new chapter 17E.070 relating to protection of wetlands. Hereinafter, the foregoing ordinances will be collectively referred to as the "Critical Areas Ordinances". The Plan Commission recommends adoption of the ordinance amending SMC Chapter 17A.020 relating to definitions for the Unified Development Code.

In making this recommendation, the Commission makes the following findings and conclusions:

FINDINGS:

1. The Washington State Legislature enacted the Growth Management Act (GMA) in 1990. GMA requires cities to adopt development regulations that protect critical areas that are required to be designated under RCW 36.70A.170.
2. GMA also requires cities to periodically review and update development regulations protecting critical areas, and establishes December 1, 2007 as a deadline by which the City of Spokane is required to take action updating its critical area protection ordinances.
3. Critical areas that must be designated under GMA include wetlands, areas with a critical recharging effect on aquifers used for potable water, frequently flooded areas, geologically hazardous areas, and fish and wildlife habitat conservation areas ("Critical Areas").
4. The City Council adopted the Critical Areas Report in 1994. The Report documented the classification, designation, and regulation of wetlands, frequently flooded areas and aquifer recharge areas through the existence of previously adopted ordinances. The Report also classified, designated and proposed a regulation scheme for fish and wildlife habitat conservation areas and geologically hazardous areas.
5. The City of Spokane adopted a Comprehensive Plan in May of 2001 that complies with the requirements of the Growth Management Act, including

designated Critical Areas and providing policy support for the protection of Critical Areas in Chapter 9, Natural Environments.

6. The Critical Area Updates referenced herein above (Critical Area Ordinances, Division E Environmental Standards) are consistent with the Comprehensive Plan, and were developed in accordance with an adopted public participation process including an Aquifer Protection and Wetlands Review Group.
7. The proposed amendments to SMC Chapter 17A.020 Definitions are necessary to provide clarity for the public and administrators of specialized terminology associated with the Critical Area Ordinances.
8. Development may result in cumulative impacts to those functions and values of Critical Areas that contribute to and are necessary for a healthy natural environment and perceived quality of life.
9. The development of residences, businesses, shopping areas and other structures, and the clearing of land for accommodation of livestock and for such development all have the potential of adversely and significantly impacting the functions and values of Critical Areas.
10. The unwise development of resource lands or areas susceptible to natural hazards may lead to inefficient use of limited public resources, jeopardize environmental resource functions and values, subject persons and property to unsafe conditions, and affect the perceived quality of life.
11. It is more costly to remedy the loss of Critical Area functions and values than to conserve and protect them from loss or degradation.
12. In determining what Critical Areas are to be afforded a particular degree of protection, the City of Spokane has evaluated a wide range of the best available science with respect to the Critical Areas to make informed decisions that meet the intent of the Growth Management Act and that are also reflective of local needs.
13. The sources of this best available science that were evaluated and included in Critical Areas Ordinances are listed below:
 - **Aquifer Recharge Areas:** General Policies U.S. Code Title 42- The Public Health and Welfare, Chapter 82- Solid Waste Disposal, Subchapter IX- Regulation of Underground Storage Tanks, Spokane Aquifer Water Quality Management Plan, Spokane County, Washington "208" Program, County Engineers Office & The Spokane Regional Planning Conference, Critical Aquifer Recharge Areas-Guidance Document, Washington State Department of Ecology, Washington's Source Water Assessment Program, Washington State Department of Health, Office of Drinking Water, Washington State Department of Health, Division of Environmental Health, Stormwater Management Manual for Eastern Washington, Washington State Department of Ecology, Water Quality Program,

International Fire Code, Spokane Aquifer Joint Board (SAJB) and Aquifer Protection Council 2007 Wellhead Protection Update, Bi-State Spokane-Rathdrum Aquifer Study, City of Spokane Environmental Programs, Washington State Department of Ecology.

- **Fish & Wildlife Habitat Conservation Areas:** Washington State Forest Practices Rules, Washington State Department of Natural Resources, stream typing, timber harvest and riparian zones, Habitat, and Priority habitat and Species Washington State Department of Fish and Wildlife, Habitat Protection Toolkit, Washington Environmental Council, Streamnet Pacific Northwest Interactive Mapper.
- **Frequently Flooded Areas:** Yakima County's Review of Best Available Science For Inclusion in Critical Areas Ordinance Update, October 2006, King County Best Available Science, Volume 1, Review of Science Literature, Thurston County, Flood and Channel Migration Hazard Areas, Department of Ecology – Floods Section, Department of Homeland Security (FEMA).
- **Geologically Hazardous Areas:** Dr Richard Orndorff, EWU consulted for review of this ordinance and mapping of geohazards in the City of Spokane, U.S. Department of Agriculture Natural resources Conservation Service.
- **Wetlands:** Wetlands in Washington State, Volume 1: A Synthesis of the Science, Wetlands in Washington State, Volume 2: Guidance for Protecting and Managing Wetlands , Washington State Wetland Rating System for Eastern Washington, Wetland Mitigation in Washington State Part 1: Agency Policies and Guidance, Wetland Mitigation in Washington State Part 1: Agency Policies and Guidance, Dr. Robert Quinn, EWU, Dr. Mike Folsom, EWU, Larry Dawes, qualified wetland professionals with the City of Spokane, Jeremy Sikes, Dept of Ecology, wetlands professional, City of Spokane Developer Services staff Kris Becker, PE.

14. Protection standards for one Critical Area often provide protection for one or more other Critical Areas.

15. Critical Areas may also be protected by other actions by the City of Spokane, such as stormwater management standards, critical area restoration, and public education; and from other regulations, such as the Forest Practices Act, the Shoreline Management Act, and the State Environmental Policy Act.

- Forest Practices Act
- Municipal Water Law
- Shoreline Management Act
 - Chapter 11.15 SMC Shoreline Master Program
- State Environmental Policy Act (SEPA)
- Division D Citywide Standards SMC
 - Concurrency Certification, Stormwater Facilities Stormwater Facilities
- Division E Environmental Standards SMC
 - Aquifer Protection, Fish & Wildlife Conservation, Floodplain Management, SEPA, Wetland
- Division G Administration and Procedures SMC

- Building and Construction Permits, Land Use Application Procedures, Planned Unit Developments, Subdivisions
- Division I Enforcement
- Chapter 1 SMC
 - General Provisions, Civil Infraction System
- Chapter 13 SMC Public Utilities and Services
- Water Stewardship Program

16. Aquifer Recharge Areas: WAC 365-190-080 defines well head protection areas, sole source aquifers, special protection areas, and other areas that are susceptible or vulnerable to ground water contamination as areas with a critical recharging effect on aquifers used for potable water (also referred to as critical aquifer recharge areas), the City of Spokane's drinking water comes from groundwater supplies, once ground water is contaminated it is difficult, costly, and sometimes impossible to clean up, preventing groundwater contamination is necessary to avoid exorbitant costs, hardships, and potential physical harm to people, *Guidance Document for Establishment of Critical Aquifer Recharge Area Ordinances*, by the Department of Ecology, 2000, includes scientific recommendations for protecting groundwater, including limiting certain uses and the intensity of development in critical aquifer recharge areas, and potable water is an essential life-sustaining element.

17. Fish and Wildlife Habitat Conservation Areas: Fish and wildlife habitat conservation areas perform many important physical and biological functions that benefit the City of Spokane and its residents, including but not limited to: maintaining species diversity and genetic diversity; providing opportunities for food, cover, nesting, breeding and movement for fish and wildlife; serving as areas for recreation, education and scientific study and aesthetic appreciation; helping to maintain air and water quality; controlling erosion; and providing neighborhood separation and visual diversity within urban areas, wetlands and streams are environmentally sensitive and serve numerous natural functions and values. These functions include wildlife and fisheries habitat, water quality protection, flood protection, shoreline stabilization, stream flow, and ground water recharge and discharge. In many situations these functions cannot be adequately replicated or replaced, the scientific literature supports in the inclusion of protective buffers from streams to provide sediment control, nutrient inputs to downstream waters, large woody debris, and other functions important to riparian areas, the Washington Department of Fish and Wildlife has prepared management recommendations for the preservation of priority habitat and species, which are based on the best available science, and include, in some instances, recommended protective buffer distances, the Department of Natural Resources has classified watercourses according to two stream-typing systems based on channel width, fish use, and perennial or intermittent status and WAC 365-190-080(5) grants the City of Spokane the flexibility to make decisions in the context of local circumstances, and specifically excuses local jurisdictions from being required to protect "all individuals of all species at all time."

18. Frequently Flooded Areas: Flood hazard areas are subject to periodic inundation that results in loss of life and property, health, and safety hazards,

disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare, these flood losses are caused by development in areas prone to inundation that increase flood heights and velocities, and when inadequately anchored, damage uses in other areas. Uses that are inadequately floodproofed, elevated, or otherwise protected from flood damage also contribute to flood loss, floodplain and stream connectivity are major elements in maintaining healthy riparian habitat and off-channel habitats for the survival of fish species and conveyance of floodwaters. If river, floodplains and other systems are not viewed holistically as biological, geomorphological units, this can lead to serious degradation of habitat and increase flood hazards, which, in turn, can contribute to listing of various fish species as threatened or endangered and result in extraordinary public expenditures for flood protection and relief, and frequently flooded areas, including the 100-year floodplain and the floodway, are commonly mapped on flood insurance maps, often known as Flood Insurance Rate Maps, or FIRMs.

19. **Geologically Hazardous Areas:** Geologically hazardous areas are subject to periodic geological events that results in loss of life and property, health, and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare, geologic hazards may be exacerbated by development and human activity in sensitive areas, and impacts resulting from geologic hazards may be reduced by limiting development and human activity within or adjacent to the geologic hazard, and some geologic hazards may be intensified during periods of consistent or heavy rainfall that results in ground saturation or surface water drainage flows.
20. **Wetlands:** Wetlands and streams are environmentally sensitive and serve numerous natural functions and values. These functions include wildlife and fisheries habitat, water quality protection, flood protection, shoreline stabilization, stream flow, and ground water recharge and discharge. In many situations these functions cannot be adequately replicated or replaced, the scientific literature supports in the inclusion of protective buffers from wetlands to provide sediment control and nutrient inputs to wetlands, and to protect important wetland functions, wetlands are identified and rated according to the *Washington State Wetland Identification and Delineation Manual*, and *Washington State Wetland Rating System* (Eastern and Western Washington), prepared by the Department of Ecology, the scientific literature supports protective buffers ranging from 25 to 300 feet of relatively intact native vegetation to adequately protect wetland functions and values, appropriate wetland mitigation ratios – ratios of areas of wetland replacement and enhancement to that altered or destroyed – are established in *Wetland Mitigation Replacement Ratios: Defining Equivalency*, published by the Department of Ecology, 1992.
21. A SEPA Environmental Checklist was completed and a Determination of Non-Significance issued, with notice published in the *Spokesman-Review* on October 5, 2007.

22. An Open House was held on October 11, 2007. Notice of the Open House was mailed to property owners with vacant and or redevelopable land in potential Critical Areas. Notice was also published in the Spokesman-Review.
23. Notice of City of Spokane Plan Commission Public Hearing on the amendments to five Critical Areas Ordinances was published in the Spokesman-Review on October 15, 2007.
24. The Plan Commission held a public hearing and took testimony on the Critical Areas Ordinances on October 24.
25. Comments submitted to the written record from Washington Department of Fish & Wildlife, Futurewise, and Avista Corporation were addressed individually by staff and the Plan Commission. Response to comments resulted in the addition of priority species to 17E.020 per WDFW, and a structural setback from a critical area buffer to 17E.020 and 17E.070 based on BAS protection of buffers as a Best Management Practice (BMP) as commented by WDFW, Futurewise, and Dept. of Ecology. All other comments and responses are recorded as addressed by the regulations, required by BAS, or requirements of other regulatory agencies.
26. The Plan Commission completed deliberations on 17E.010, 17E.030, and 17E.040 SMC on November 6, 2007. The Plan Commission completed deliberations on 17E.020 and 17E.070 SMC on November 14, 2007. The Plan Commission recommends all five Critical Area Ordinance amendments go forward to the City Council with changes as deliberated.
27. The U.S. Constitution prohibits the taking of private property without just compensation.

CONCLUSIONS:

1. The review and subsequent amendments to Aquifer Protection, Fish and Wildlife Habitat conservation Areas, Floodplain Management, Geologically Hazardous Areas, and Wetlands Protection regulations will promote the protection of the City's Critical Areas, as required by the Growth Management Act.
2. Working with state agencies, consulting with other jurisdictions, consulting with qualified local scientific experts, and researching the latest reports and studies, the City has incorporated the "best available science" into the amendments of these ordinances. These ordinances should be updated as new and better science is developed.
3. The environmental review and determination for the proposed amendments to the regulations fulfilled the requirements and intent of the Spokane Environmental Ordinance and the State Environmental Policy Act.

4. Adoption of these amendments is of public necessity; will benefit the general welfare of the community; constitutes good planning practices; and will not be unduly detrimental to properties within critical areas.
5. Mechanisms to ensure opportunity for public input into the planning process fulfilled legal requirements and the intent and policies of the Plan Commission.
6. The City's Critical Area Ordinances are supported by maps showing designated Critical Areas. It is recognized, however, that some Critical Areas may not be mapped. Mapping shall be for informational purposes only, and the criteria for identification of Critical Areas in the regulations shall prevail.
7. Adoption of these changes will officially amend Chapters 17A.020, 17E.010 and 17E.030 of the SMC, and will repeal certain chapters of the SMC and replace those chapters with new Chapters 17E.020, 17E.040, and 17E.070 SMC.

These findings and conclusions were approved on November 14, 2007

Michael Ekins, President
Spokane Plan Commission

City Council Hearing – Critical Areas Update

November 26, 2007

Wetlands - Summary of Substantive Changes

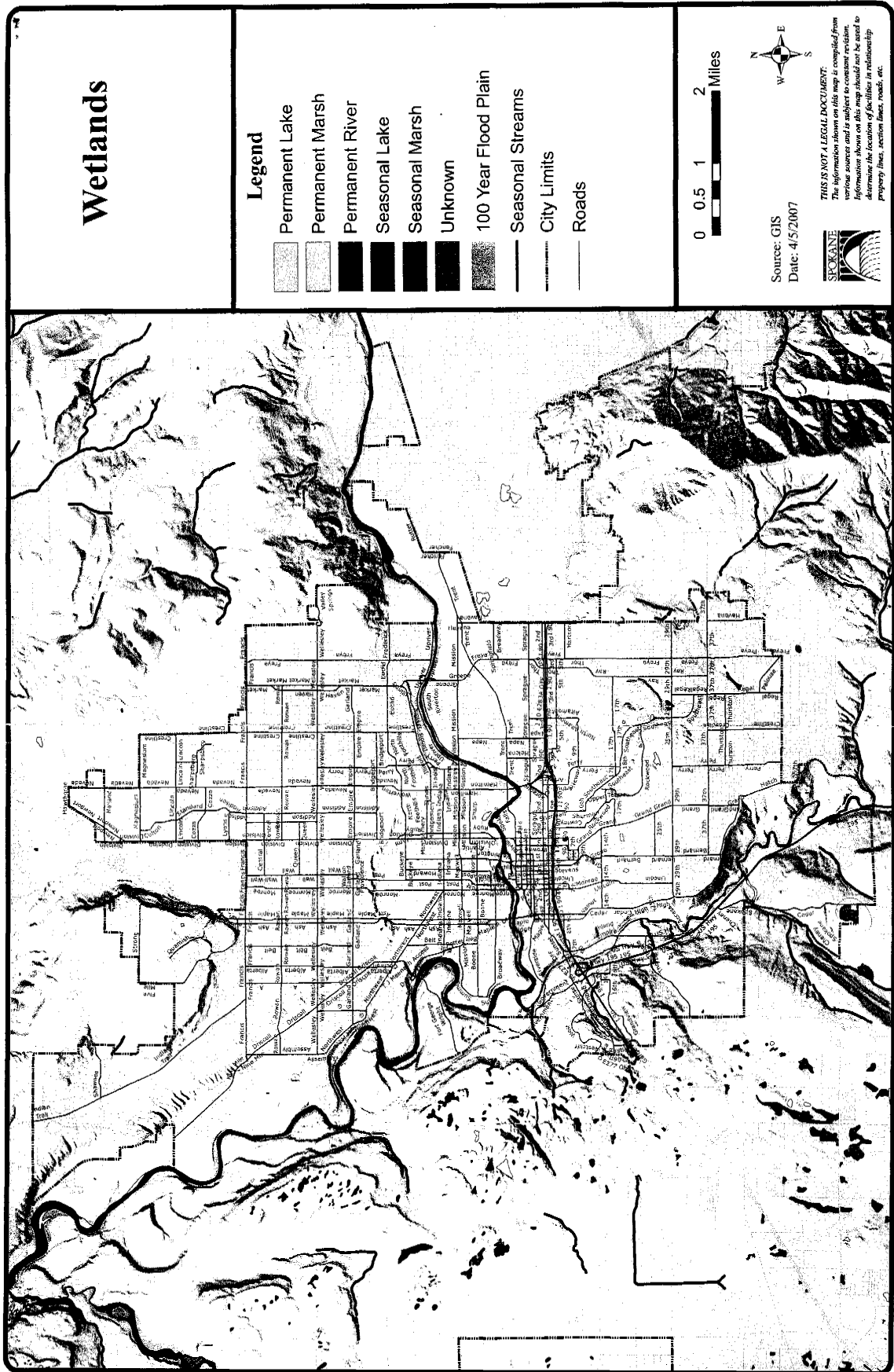
Division E Environmental SMC 17E.070

Repeal of 11.19.3010, move to Title 17, Unified Development Code

Section	Changes
Definitions	Removed definitions from this ordinance and moved them to 17A.020.
17E.070.010	Title and Purpose - Added Comprehensive Plan, and no net loss of function and value statements. Added description of wetland functions. These functions are listed to provide an understanding of their importance and the means used to protect them.
17E.070.020	Applicability – Added GMA definition of wetlands, applies to all wetlands regardless of formal designation.
17E.070.030	Identification and Designation – Criteria to identify wetlands prevail over maps. Added statement per BAS: All wetlands are protected regardless of size or isolation.” Updated documents to be used for wetland delineation and determinations. The use of Ecology and Army Corp of Engineers manuals qualifies as a BAS source required by GMA. Added state and federal sunset requirements for wetland determinations. An identification and delineation over five years old, made prior to the adoption of these standards, or requiring permit changes may require a current delineation.
17E.070.040	Regulated Activities - No regulated activity may take place without submission of a Critical Areas checklist and required permits first.
17E.070.050	Unregulated Activities - Added repair and maintenance provided no expansion or introduction of adverse impacts take place, maintenance to drainage ditches should be limited as specified. Require site investigative work to be minimized for least impact.
17E.070.060	Emergency Activities - Restoration efforts required by emergency repair must follow provisions of chapter.
17E.070.080	Application Submittal – Added pre-development conference. Added Critical Areas Checklist.
17E.070.090	Posting, covenants, and recording - Added flagging of buffers during construction. Recording buffers and permanent conditions on plat, title. Director may require placement of permanent markers for buffers on site. Procedure for revocation of covenant if wetland “dies.”
17E.070.100	Wetlands Rating System - Added the use of Washington State Wetland Rating System for Eastern Washington. Tailored to Eastern Washington for Category I aspen stands per Ecology approval. Added the description of each wetland type according to guidance from Washington State Department of Ecology. The new definitions are based more on wetland characteristics and functions rather than acreage or size.

SHAPING SPOKANE VOLUME III, APPENDIX G

17E.070.110	Wetland Buffers - Added new buffer width tables consistent with guidance from Washington State Department of Ecology. These new tables provide additional flexibility for development to protect wetlands through the use of alternative methods, including one based on wetland category, habitat scores and scale of intensity in the activity proposed. Buffer widths may be adjusted downward as more comprehensive study is undertaken by the developer. Buffer zones shall be maintained in natural condition. Buffer disturbances during construction require revegetation. Added requirement for Structural Setbacks from Buffers. The buffer tables and provisions are also consistent with the Spokane County Update proposals.
17E.070.130	Mitigation – Added mitigation sequencing language as required by BAS. Added new mitigation ratio table taken from Department of Ecology- mitigation ratios are increased based on BAS. The new mitigation ratio table provides more flexibility and incentive for development to mitigate wetland loss using the preferred methods of mitigation. The preferred methods are re-establishment and creation. Includes required mitigation sequencing language. Monitoring periods have been extended for certain types of wetland. Performance bonds required.
17E.070.140	Mitigation Banking - Wetland Mitigation Banking provisions added, consistent with RCW 90.84. Wetland mitigation bank credits are the last stage under mitigation sequencing. There is not currently a wetland bank located in Spokane County.
17E.070.150	Incentives and Stewardship Options - added language for on-site density transfer, removed transfer of development rights, added stewardship section.
17E.070.160	Administration, Violation, and Enforcement - Restructured enforcement and penalties section. More explicit and stronger language for procedures, actions, and penalties. New sections.



ORDINANCE NO. C -34148

An ordinance relating to wetlands protection; repealing SMC sections 11.19.2010, 11.19.3015, 11.19.3016, 11.19.3017, 11.19.3018, 11.19.3019, 11.19.3020, 11.19.3021, 11.19.3022, 11.19.3023, 11.19.3024, 11.19.3025, 11.19.3026, 11.19.3027, 11.19.3028, 11.19.3029, 11.19.3030, 11.19.3031, 11.19.3032, 11.19.3033, 11.19.3034, 11.19.3035, 11.19.3036, 11.19.3037, 11.19.3038, 11.19.3039, 11.19.3040, 11.19.3041, 11.19.3042, 11.19.3043, 11.19.3044, 11.19.3045, 11.19.3046, 11.19.3047, 11.19.3048, 11.19.3049, 11.19.3050, 11.19.3051, 11.19.3052, 11.19.3053, 11.19.3054, 11.19.3055, 11.19.3056, 11.19.3057, 11.19.3058, 11.19.3059, 11.19.3060, 11.19.3061, 11.19.3062, 11.19.3063, 11.19.3064, 11.19.3065, 11.19.3066, 11.19.3067, 11.19.3068, 11.19.3069, 11.19.3070, 11.19.3071, 11.19.3073, 11.19.3075, 11.19.3077, 11.19.3079, 11.19.3081, 11.19.3083, 11.19.3085, 11.19.3087, 11.19.3089, 11.19.3091, 11.10.3093, 11.19.3095 and 1.19.3097; and adopting a new chapter 17E.070 to division E of title 17 of the Spokane Municipal Code.

Whereas, the Growth Management Act (GMA) requires cities to adopt development regulations that protect critical areas that are required to be designated under RCW 36.70A.170 ("Critical Area Ordinances"); and

Whereas, GMA also requires cities to periodically review and update their Critical Area Ordinances and establishes December 1, 2007 as a deadline by which the City of Spokane is required to take action updating its Critical Area Ordinances ("Critical Area Updates"); and

Whereas, critical areas that must be designated under GMA include wetlands, areas with a critical recharging effect on aquifers used for potable water, frequently flooded areas, geologically hazardous areas, and fish and wildlife habitat conservation areas ("Critical Areas"); and

Whereas, in preparing its Critical Area Updates, and as outlined in the findings and conclusions of the Plan Commission, dated November 14, 2007 ("Plan Commission Findings and Recommendations"), the City has worked with state agencies, consulted with other jurisdictions, consulted with qualified local scientific experts, and researched the latest reports and studies and has included the best available science, consistent with local needs, in developing the current updates to its Critical Area Ordinances to protect the functions and values of Critical Areas, as required by GMA; and

Whereas, the sources of this best available science that were evaluated and included in Critical Areas Updates include: Wetlands in Washington State, Volume 1: A Synthesis of the Science; Wetlands in Washington State, Volume 2: Guidance for Protecting and Managing Wetlands; Washington State Wetland Rating System for Eastern Washington, Wetland Mitigation in Washington State Part 1: Agency Policies and Guidance; Wetland Mitigation in Washington State Part 1: Agency Policies and Guidance; Dr. Robert Quinn, EWU; Dr. Mike Folsom, EWU; Larry Dawes, qualified wetland professionals with the City of Spokane; Jeremy Sikes, Department of Ecology,

As Amended by Council

12-03-07

wetlands professional; and City of Spokane developer services staff Kris Becker, PE; and

Whereas, wetlands and streams are environmentally sensitive and serve numerous natural functions and values. These functions include wildlife and fisheries habitat, water quality protection, flood protection, shoreline stabilization, stream flow, and ground water recharge and discharge. In many situations these functions cannot be adequately replicated or replaced, the scientific literature supports in the inclusion of protective buffers from wetlands to provide sediment control and nutrient inputs to wetlands, and to protect important wetland functions, wetlands are identified and rated according to the *Washington State Wetland Identification and Delineation Manual*, and *Washington State Wetland Rating System* (Eastern and Western Washington), prepared by the Department of Ecology, the scientific literature supports protective buffers ranging from twenty five to three hundred feet of relatively intact native vegetation to adequately protect wetland functions and values, appropriate wetland mitigation ratios – ratios of areas of wetland replacement and enhancement to that altered or destroyed – are established in *Wetland Mitigation Replacement Ratios: Defining Equivalency*, published by the Department of Ecology, 1992; and

Whereas, development may result in cumulative impacts to those functions and values of Critical Areas that contribute to and are necessary for a healthy natural environment and perceived quality of life; and

Whereas, it is more costly to remedy the loss of Critical Area functions and values than to conserve and protect them from loss or degradation; and

Whereas, a SEPA Environmental Checklist was completed and a Determination of Non-Significance issued, with notice published in the Spokesman-Review on October 5, 2007; and

Whereas, an Open House was held on October 11, 2007. Notice of the Open House was mailed to property owners with vacant and or redevelopable land in potential Critical Areas. Notice was also published in the Spokesman-Review; and

Whereas, notice of City of Spokane Plan Commission Public Hearing on the Critical Area Updates was published in the Spokesman-Review on October 15, 2007; and

Whereas, the Plan Commission held a public hearing and took testimony on the Critical Area Updates on October 24 and completed deliberations November 14, 2007; and

Whereas, the environmental review and determination for the Critical Area Updates fulfilled the requirements and intent of the Spokane Environmental Ordinance and the State Environmental Policy Act; and

Whereas, adoption of the Critical Area Updates is of public necessity; will protect public health, safety, and welfare; constitutes good planning practices; and will not be unduly detrimental to properties within Critical Areas; and

Whereas, mechanisms to ensure opportunity for public input into the planning process fulfilled legal requirements and the intent and policies of the Plan Commission;
-- Now, Therefore,

The City of Spokane does ordain:

Section 1. That SMC 11.19.3010 is repealed.

Section 2. That SMC 11.19.3015 is repealed.

Section 3. That SMC 11.19.3016 is repealed.

Section 4. That SMC 11.19.3017 is repealed.

Section 5. That SMC 11.19.3018 is repealed.

Section 6. That SMC 11.19.3019 is repealed.

Section 7. That SMC 11.19.3020 is repealed.

Section 8. That SMC 11.19.3021 is repealed.

Section 9. That SMC 11.19.3022 is repealed.

Section 10. That SMC 11.19.3023 is repealed.

Section 11. That SMC 11.19.3024 is repealed.

Section 12. That SMC 11.19.3025 is repealed.

Section 13. That SMC 11.19.3026 is repealed.

Section 14. That SMC 11.19.3027 is repealed.

Section 15. That SMC 11.19.3028 is repealed.

Section 16. That SMC 11.19.3029 is repealed.

Section 17. That SMC 11.19.3030 is repealed.

Section 20. That SMC 11.19.3031 is repealed.

Section 21. That SMC 11.19.3032 is repealed.

Section 22. That SMC 11.19.3033 is repealed.

Section 23. That SMC 11.19.3034 is repealed.

Section 24. That SMC 11.19.3035 is repealed.

Section 25. That SMC 11.19.3036 is repealed.

Section 26. That SMC 11.19.3037 is repealed.

Section 27. That SMC 11.19.3038 is repealed.

Section 28. That SMC 11.19.3039 is repealed.

Section 29. That SMC 11.19.3040 is repealed.

Section 30. That SMC 11.19.3041 is repealed.

Section 31. That SMC 11.19.3042 is repealed.

Section 32. That SMC 11.19.3043 is repealed.

Section 33. That SMC 11.19.3044 is repealed.

Section 34. That SMC 11.19.3045 is repealed.

Section 35. That SMC 11.19.3046 is repealed.

Section 37. That SMC 11.19.3047 is repealed.

Section 38. That SMC 11.19.3048 is repealed.

Section 39. That SMC 11.19.3049 is repealed.

Section 40. That SMC 11.19.3050 is repealed.

Section 41. That SMC 11.19.3051 is repealed.

Section 42. That SMC 11.19.3052 is repealed.

Section 43. That SMC 11.19.3053 is repealed.

Section 44. That SMC 11.19.3054 is repealed.

Section 45. That SMC 11.19.3055 is repealed.

Section 46. That SMC 11.19.3056 is repealed.

Section 47. That SMC 11.19.3057 is repealed.

Section 48. That SMC 11.19.3058 is repealed.

Section 49. That SMC 11.19.3059 is repealed.

Section 50. That SMC 11.19.3060 is repealed.

Section 51. That SMC 11.19.3061 is repealed.

Section 52. That SMC 11.19.3062 is repealed.

Section 53. That SMC 11.19.3063 is repealed.

Section 54. That SMC 11.19.3064 is repealed.

Section 55. That SMC 11.19.3065 is repealed.

Section 56. That SMC 11.19.3066 is repealed.

Section 57. That SMC 11.19.3067 is repealed.

Section 58. That SMC 11.19.3068 is repealed.

Section 59. That SMC 11.19.3069 is repealed.

Section 60. That SMC 11.19.3070 is repealed.

Section 61. That SMC 11.19.3071 is repealed.

Section 62. That SMC 11.19.3073 is repealed.

Section 63. That SMC 11.19.3075 is repealed.

Section 64. That SMC 11.19. 3077 is repealed.

Section 65 That SMC 11.19.3079 is repealed.

Section 66. That SMC 11.19.3081 is repealed.

Section 67. That SMC 11.19.3083 is repealed.

Section 68. That SMC 11.19.3085 is repealed.

Section 69. That SMC 11.19.3087 is repealed.

Section 70. That SMC 11.19.3089 is repealed.

Section 71. That SMC 11.19.3091 is repealed.

Section 72. That SMC 11.19.3093 is repealed.

Section 73. That SMC 11.19.3095 is repealed.

Section 74. That SMC 11.19.3097 is repealed.

Section 75. That the findings and conclusions of the Plan Commission, dated November 14, 2007, and the preambles to this Ordinance are adopted as the City Council's findings of fact in support of this Ordinance.

Section 76. That there is adopted a new chapter 17E.070 to division E of title 17 to read as follows:

**Division E Environmental
Chapter 17E.070**

Wetlands Protection

Sections

17E.070.010	Title and Purpose
17E.070.020	Applicability
17E.070.030	Identification, Designation, and Mapping of Wetlands
17E.070.040	Regulated Activities
17E.070.050	Unregulated Activities
17E.070.060	Emergency Activities
17E.070.070	Prohibited Activities
17E.070.080	Application Submittal Requirements
17 E.070.090	Posting, covenants, and recording conditions
17E.070.100	Wetlands Rating System
17E.070.110	Wetland Buffers
17E.070.120	Reasonable Use Exceptions
17E.070.130	Mitigation
17E.070.140	Mitigation Banking
17E.070.150	Incentives and Stewardship Options
17E.070.160	Administration
17E.070.170	Violations
17E.070.180	Authority to enforce

17E.070.010 Title and Purpose

- A. This chapter shall be known and may be cited as the "Spokane Wetlands Protection Code."
- B. This chapter is based on and implements the City of Spokane Comprehensive Plan, and shoreline master program as amended from time to time. The purpose of this chapter is to protect the public health, safety and welfare by preserving, protecting and restoring wetlands through the regulation of development and other activities within wetlands and their buffers, and not to create or otherwise establish or designate any particular person, or class, or group of persons who will or should be especially protected or assisted by the terms or provisions of this chapter. Further, it is the purpose of this chapter through the regulation of development and activities to meet the required goal of no net loss of wetland areas, functions and values.
 - 1. The city council finds that wetlands constitute important natural resources which provide significant environmental functions including:
 - a. Improving water quality through biofiltration, adsorption, retention and transformation of sediments, nutrients, and toxicants;
 - b. maintaining the water regime in a watershed (hydraulic functions) such as reducing peak flows, erosion control, stabilizing stream banks and shorelines, and recharging ground water;
 - c. providing general habitat, habitat for invertebrates, amphibians, anadromous fish, and resident fish;
 - d. providing habitat to aquatic birds and aquatic mammals and providing richness of food and supporting food webs; and
 - d. providing a place for education, scientific study, and aesthetic appreciation.
- C. The provisions of this chapter shall be liberally construed to effectively carry out its purpose. If any provisions of this chapter conflict with other regulations, ordinances, or other authorities, the provision that provides more protection to wetlands and wetland buffers shall apply.

17E.070.020 Applicability

- A. The requirements of this chapter apply to all activities and development occurring in a wetland or wetland buffer, as defined in this chapter. Property located in a wetland or wetland buffer as defined in this chapter is subject to both its zoning classification regulations and to the additional requirements imposed under this

chapter. In any case where there is a conflict between the provisions of the underlying zone and this chapter, the provisions of this chapter shall apply.

- B. Wetlands are those areas, designated in accordance with the most current edition of the *Washington State Wetland Identification and Delineation Manual*, that are inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from nonwetland areas created to mitigate conversion of wetlands. All areas within the City meeting the wetland designation criteria in the *Identification and Delineation Manual*, regardless of any formal identification, are hereby designated critical areas and are subject to the provisions of this chapter.
- C. Nothing contained in this chapter is intended to be nor shall be construed to create or form the basis for liability on the part of the City, or its officers, officials, employees, or agents for any injury or damage resulting from the failure of any owner of property or land to comply with the provisions of this chapter, or by reason or in consequence of any inspection, notice, order, certificate, permission, or approval authorized or issued in connection with the implementation or enforcement of this chapter, or by reason of any action or inaction on the part of the City related in any manner to the enforcement of this chapter by its officers, officials, employees, or agents.

17E.070.030 Identification, Designation, and Mapping of Wetlands

- A. Wetland Maps.

The approximate location, and extent of wetlands in the city is compiled in the City wetlands inventory. Their approximate location is displayed on City maps. The foregoing maps are to be used as a guide for the city, project applicants, and/or property owners, and may be continuously updated as new wetlands are identified. The maps are references and do not provide a final wetlands designation or delineation. Wetlands of any size and state of isolation are regulated under the provisions of this ordinance. Wetlands not shown on city maps or wetlands inventory are presumed to exist in the city and are protected under the provisions of this chapter. In the event that any of the wetland designations shown on the wetland inventory or maps conflict with the criteria set forth in this chapter, the criteria shall control.

- B. Determination of Wetland Boundary.

1. The applicant shall, through the performance of a field investigation by a qualified professional wetland scientist applying the wetland definition provided in this chapter and in SMC 17A.020.230 and as part of the wetlands report requirement found in this chapter provide a site analysis including: a determination of the exact location of the wetland boundary; an analysis of wetland functions and values; and a wetland rating according to the wetlands rating system criteria adopted in SMC 17E.070.100. Qualified wetland scientists shall perform wetland delineations using the Federal Manual for Identifying and Delineating Jurisdictional Wetlands (1987), Interim Regional Supplement: Arid West Wetlands Manual (2006), and Washington State Wetlands Identification and Delineation Manual as revised or supplemented. The Director, upon consultation with the Department of Ecology, may determine that wetland identification and delineations made prior to adoption of these standards, or for a different use requiring permit changes, require a new determination by a qualified wetland scientist. Wetland determinations are subject to Corps Regulatory Guidance Letter (RGL) 05-02, 2005 and expire after five years from the date of determination and must follow requirements for review by a qualified wetland scientist upon expiration of the five year limitation
2. Where an applicant has provided a delineation of a wetland boundary, the department shall verify the accuracy of, and may render adjustments to the boundary delineation and the applicant may be charged by the department for costs incurred in verifying the accuracy of the delineation. In the event the adjusted boundary delineation is contested by the applicant, the department may, at the applicant's expense, obtain the services of a second wetlands scientist to perform a delineation. The second delineation shall be final, unless appealed to the hearing examiner.

17E.070.040 Regulated Activities

- A. No regulated activity shall be undertaken in a wetland or wetland buffer without submitting a Critical Areas Checklist as provided at SMC 17 E.070.080 and first obtaining required permits. Uses and activities in wetlands are only allowed as conditional use permits or planned unit developments under the provisions of the City zoning code. Unless expressly provided otherwise in this chapter, regulated activities include any of the following activities which occur in a wetland or its buffer:
 1. removal, excavation, grading, or dredging of soil, sand, gravel;
 2. dumping, discharging, or filling with any material;
 3. draining or flooding, or disturbing of the water level or water table;

4. driving of pilings;
 5. placing of obstructions;
 6. construction, reconstruction, demolition, or expansion of any structure;
 7. the removal, cutting, clearing, harvesting, shading, or intentional burning of any vegetation, including removal of snags or dead or downed woody material, or planting of non-native vegetation that would degrade the wetland; provided that these activities are not part of a forest practice governed under chapter 76.09 RCW and its rules;
 8. activities that restrict, increase, or otherwise measurably alter the hydrology, water quality, or limnology of the wetland;
 9. construction or installation of streets or utilities; and
 10. construction and maintenance of pervious trails.
- B. Where a regulated activity is proposed which would be partly inside and partly outside a wetland or wetland buffer, a wetland permit shall be required for the entire regulated activity. The standards of this chapter shall apply only to that part of the regulated activity which occurs inside the delineated boundaries of a wetland or a wetland buffer; provided, all activities that occur outside a wetland or wetland buffer are prohibited from negatively impacting a wetland or wetland buffer.

17E.070.050 Unregulated Activities

- A. The following activities are allowed within a wetland or wetland buffer to the extent that they are not prohibited by other local, State, or federal law and do not degrade a wetland or wetland buffer:
1. Conservation or preservation of soil, water, vegetation, fish, shellfish and other wildlife including the planting of native wetland vegetation;
 2. activities having minimal adverse impacts on wetland buffers and no adverse impact on wetlands, including low-intensity, passive recreation activities such as short-term scientific or education activities and sports fishing or hunting;
 3. repair and maintenance of existing drainage ditches which are part of a nonconforming wetland use, provided no expansion or introduction of new adverse impact to the wetland takes place. Maintenance of existing drainage ditches should be limited to removing sediment to depth at last maintenance. The use of current best management practices is especially encouraged to improve agricultural practices in and near wetlands;

4. placement of navigation aids and boundary markers;
 5. placement of boat mooring buoys;
 6. site investigative work necessary for land use application submittal such as surveys, soil logs and other related activities. Disturbance shall be minimized to the greatest extent possible. Examples of minimal impact methods include, but are not limited to, hand dug test pits or hand borings. All subsurface exploration methods shall be approved in advance by the director. In every case, wetland impacts shall be minimized and disturbed areas shall be immediately restored; and
 7. normal maintenance of existing utility and street systems, provided that, whenever possible, maintenance activities be confined to late summer and fall. Operation, maintenance or repair of public rights-of-way, legally existing roads, structures or facilities and associated right of way used in the service of the public to provide transportation, electricity, gas, water, telephone, telegraph, telecommunication, sanitary sewer, stormwater treatment and other public utility services are exempt from this chapter. Operation, maintenance, or repair activities that do not require construction permits, if the activity does not further alter or increase impact to, or encroach further within, the critical area or buffer and there is no increased risk to life or property as a result of the proposed operation, maintenance, or repair. Operation and vegetation management performed in accordance with best management practices that is part of ongoing maintenance of structures, infrastructure, or utilities, provided that such management actions are part of a regular ongoing maintenance, do not expand further into the critical area, are not the result of an expansion of the structure or utility, and do not directly impact endangered species. These ongoing activities are not subject to new or additional mitigation when they do not expand further into the critical area, are not the result of an expansion of the structure or utility, or do not directly impact endangered species. Whenever possible, maintenance activities will be confined to late summer and fall.
- B. Forest practices and conversions shall be governed by chapter 76.09 RCW and rules promulgated thereunder. This permit exemption does not apply where such activities result in the conversion of a wetland or wetland buffer to a use requiring a permit under this chapter.

17E.070.060 Emergency Activities

- A. Notwithstanding the provisions of this chapter or any other laws to the contrary, the director may allow emergency activities if:
1. the director determines that an imminent threat to public health, safety, or the environment will occur if an emergency activity is not allowed; and
 2. the threat or loss may occur before normal and usual process is followed or modified under the procedures otherwise required by this chapter.

B. Any emergency activity allowed shall:

1. Incorporate to the greatest extent practicable the standards and criteria required for non-emergency activities;
2. be limited in duration to the time required to complete the authorized emergency activity, not to exceed ninety days without reapplication; and
3. require the restoration of any wetland altered as a result of the emergency activity within ninety days following the emergency repair, or during the growing season after the emergency repair. Procedures otherwise required by this chapter must be followed for restoration efforts required by the emergency repair in accordance with this chapter.

17E.070.070 Prohibited Activities

Activities that are not regulated activities under SMC 17E.070.040, unregulated activities under SMC 17E.070.050, or emergency activities under SMC 17E.070.060, are prohibited. In order to conduct an otherwise prohibited activity in a wetland or wetland buffer, the applicant must satisfy the requirements for a reasonable use exception as described in SMC 17E.070.120.

17E.070.080 Application Submittal Requirements

- A. A pre-development conference is required for all regulated activities proposed in potential wetland areas and associated buffers per chapter 17G.060 SMC. The pre-development conference is intended to acquaint an applicant with standards, requirements, investigation procedures, best management practice, and potential review procedures prior to making application.
- B. All activities identified in SMC 17E.070.040 shall meet the following application submittal requirements in addition to the application submittal requirements specified in other codes. The director may modify the submittal requirements based upon reasonable documentation, including BAS, needed to ensure compliance with this chapter, provided no construction activity, clearing, or grading has taken place. A written summary of analysis and findings shall be included in any staff report or decision on the underlying permit.
 1. Wetlands Report. This report shall include a written assessment and accompanying maps of the impacted wetland including, at a minimum, wetland delineation and rating as determined by SMC 17E.070.100; existing wetland acreage; proposed wetland impacts; alternatives to wetlands impacts; proposed wetland buffer; vegetative, faunal and hydrological characteristics; soil and substrate conditions and topographic elevations; and shall be submitted as a part of permit application.

2. Topographic Survey. To the extent not provided in the wetlands report, a topographic site plan, prepared and stamped by a State of Washington licensed surveyor, is required for sites that include a wetland or its buffer. The topographic site plan shall include the following existing physical elements:
 - a. Existing topography at two-foot contour intervals on-site, on adjacent lands within twenty-five feet of the site's property lines, and on the full width of abutting public and private rights-of-way and easements;
 - b. Terrain and stormwater-flow characteristics within the site, on adjacent sites within twenty-five feet of the site's property lines, and on the full width of abutting public and private rights-of-way and easements;
 - c. Location of areas with significant amounts of vegetation, and specific location and description of all trees with trunks six inches or greater in diameter at breast height (dbh) measured four feet, six inches above the ground, and noting their species;
 - d. Location and boundaries of all existing site improvements on the site, on adjacent lands within twenty-five feet of the site's property lines, and on the full width of abutting public and private rights-of-way and easements. This shall include the amounts of developmental coverage, including all impervious surfaces (noting total square footage and percentage of site occupied);
 - e. Location of all grading activities in progress, and all natural and artificial drainage control facilities or systems in existence or on adjacent lands on the site, within twenty-five feet of the site's property lines, and in the full width of abutting public and private rights-of-way and easements;
 - f. Location of all existing utilities (water, sewer, gas, electric, phone, cable, etc.), both above and below ground, on the site, on adjacent lands within twenty-five feet of the site's property lines and in the full width of abutting public rights-of-way; and
 - g. Such additional existing physical elements information for the site and surrounding area as required by the director to complete review of a project subject to the standards of this chapter.
3. Additional Site Plan Information. To the extent not provided in the wetlands report, the following site plan information shall also be required for sites that include wetlands and their buffers. Information related to the

location and boundaries of wetlands and required buffer delineations shall be prepared by qualified professionals with training and experience in their respective area of expertise as demonstrated to the satisfaction of the director.

- a. Location and boundaries of all wetlands and wetland buffer on the site and on adjacent lands within twenty-five feet of the site's property lines, noting both total square footage and percentage of site;
 - b. Location and identification of all wetlands within one hundred feet of the site's property lines;
 - c. Location and boundaries of all proposed site improvements on the site, on adjacent lands within twenty-five feet of the site's property lines, and on the full width of abutting public and private rights-of-way and easements. This shall include the amount of proposed land disturbing activities, including amounts of developmental coverage, impervious surfaces and construction activity areas (noting total square footage and percentage of site occupied);
 - d. Location of all proposed grading activities and all proposed drainage control facilities or systems on the site or on adjacent lands within twenty-five feet of the site's property lines, and on the full width of abutting public and private rights-of-way and easements;
 - e. Location of all proposed utilities (water, sewer, gas, electric, phone, cable, etc.), both above and below ground, on the site, on adjacent lands within twenty-five feet of the site's property lines, in the full width of abutting public rights-of-way, and any proposed extension required to connect to existing utilities, and proposed methods and locations for the proposed development to hook-up to these services; and
 - f. Such additional site plan information related to the proposed development as required by the director to complete review of a project subject to the standards of this chapter.
4. Technical Reports. To the extent not provided in the wetlands report, technical reports and other studies and submittals shall be prepared as required by the director detailing soils, geological, hydrological, drainage, plant ecology and botany, and other pertinent site information. The reports, studies and submittals shall be used to condition development to prevent potential harm and to protect the critical nature of the site, adjacent properties, and the drainage basin.

17E.070.090 Posting, covenants, and recording conditions

- A. During construction, the director may require conditions to be posted on the site that are visible from public rights-of-way.
- B. The director shall require the boundaries of wetlands and their buffers and any permanent conditions imposed be legibly shown and described in a permanent covenant with the property, which must be acceptable to the director and city attorney and shall be recorded in the Spokane County Auditor's Office.
- C. The covenant shall be recorded prior to the issuance of any permit or at the time a plat is recorded.
- D. The covenant shall be permanent unless a revocation is applied for that includes a wetland determination by a qualified wetland scientist that provides evidence the wetland no longer exists. The revocation application must be approved by the director in writing.
- E. The director may require placement of small permanent visible markers to delineate the areas described in subsection B. Said markers shall be posted at intervals required by the director and must be perpetually maintained by the property owner. The markers shall be worded as follow or with alternative language approved by the director: "The area beyond this sign is a critical area or critical area buffer. This sensitive environment is to be protected from alteration or disturbance. Please call the City of Spokane for more information." The location of the markers shall be legibly shown and described in the permanent covenant.

17E.070.100 Wetlands Rating System

- A. Wetlands shall be rated according to the Washington State Department of Ecology wetland rating system found in the Washington State Wetlands Rating System for Eastern Washington (2004) as revised, together with the Wetlands in Washington State Volume 1 and 2 (2005) as revised. These rating system documents contain the definitions and methods for determining if the criteria in subsections B through E below are met. In using the rating system the City will not consider aspen-dominated forested wetlands larger than one-fourth acre to be Category I Wetlands unless they also meet one or more of the other criteria for a Category I Wetland.
- B. Category I Wetlands. These wetlands are not common and make up a small percentage of wetlands in the region. Category I wetlands are those that exhibit these primary characteristics: Represent a rare wetland type; are more sensitive to disturbance than most wetlands; are relatively undisturbed and contain ecological attributes that are impossible to replace within a human lifetime; and

provide a high level of function. In eastern Washington Category I Wetlands include but are not limited to the following examples:

1. Alkali wetlands;
 2. Natural Heritage Program (DNR) Wetlands;
 3. bogs;
 4. mature and old-growth forested wetlands over one-fourth acre with slow growing trees; and
 5. wetlands that perform many functions very well (scores of seventy points or more).
- C. Category II Wetlands. Category II wetlands are difficult, although not impossible, to replace and provide high levels of some functions. These wetlands occur more commonly than Category I wetlands, but still need a relatively high level of protection. Category II wetlands include: forested wetlands in the floodplains of rivers; mature and old-growth forested wetlands over one-fourth acre with fast growing trees; vernal pools; and wetlands that perform functions well (scores between fifty one and sixty nine points).
- D. Category III Wetlands. Category III wetlands generally have been disturbed in some ways, and are often smaller, less diverse and/or more isolated from other natural resources in the landscape than Category II wetlands and may not need as much protection as Category I and II Wetlands. Category III wetlands are: vernal pools that are isolated; and wetlands with a moderate level of function (between thirty and fifty points).
- E. Category IV Wetlands. Category IV wetlands have the lowest levels of function (less than thirty points) and are often heavily disturbed. These are wetlands that may be replaced and in some cases improved. These wetlands may provide some important function, and also need to be protected. Category IV wetlands are comprised of one vegetative class other than the forested wetland class.

17E.070.110 Wetland Buffers

A. Standard Buffer Zone Widths.

Wetland buffer zones shall be required for all regulated activities adjacent to wetlands. Any wetland created, restored, or enhanced as compensation for approved wetland alterations shall also include the standard buffer required for the category of the created, restored, or enhanced wetland. All buffers shall be measured from the wetland boundary as surveyed in the field pursuant to the requirements of SMC 17E.070.030. The width of the wetland buffer zone shall be determined according to the rating assigned to the wetland in accordance with SMC 17E.070.100 and consistent with Wetlands in Washington State, Volume 2,

Protecting and Managing Wetlands, Guidance on Buffers and Ratios (Appendix 8-D) as revised, for wetland category, intensity of impacts, wetland functions, habitat scores, or special characteristics. Standard buffer widths will be determined based on an evaluation of the following:

1. conditions of the wetland;
2. conditions of the buffer;
3. proposed land uses adjacent to the buffer; and
4. the functions intended to be protected.

B. Wildlife habitat function is the most susceptible to developmental change and requires the greatest buffer protection. Protection of wildlife habitat functions require twenty five to seventy five feet for wetlands with minimal habitat functions and low intensity land uses adjacent to the wetlands, fifty to two hundred feet for wetlands with moderate habitat function and moderate or high intensity land use adjacent to the wetlands, and one hundred fifty to two hundred fifty plus feet for wetlands with high habitat functions depending on the intensity of the adjacent land use. The width of the wetland buffer zone shall be determined from one of the following two alternatives:

1. Alternative 1.

Unless SMC 17E.070.110(3) (Table 17E.070.110-4) applies, width based solely on wetland category as follows:

Table 17E.070.110-1

Wetland Category	Buffer Width
Type I	250 ft
Type II	200 ft
Type III	150 ft
Type IV	50 ft

2. Alternative 2.

Alternative 2 provides three buffer widths based on habitat scores. Habitat score refers to the quality of physical structures such as vegetation, open water, and connections to other wildlife habitats that are necessary for a wide range of species, including birds, mammals, and amphibians. Where more than one width applies based on score for function or based on special characteristics, the calculation providing the widest buffer shall be used. Width based on wetland category, intensity of impacts from proposed changes in land use, and wetland functions or special characteristics. Land use intensity shall be determined as follows:

Table 17E.070.110-2

Impact from Proposed Change in Land Use	Types of Land Use Based on Common Zoning Designations
High	Commercial, Industrial and Institutional Residential (more than 1 unit/acre) High-intensity recreation (golf courses, ball fields, etc.) Conversion to high intensity agricultural (dairies, nurseries, greenhouses, etc.)
Moderate	Residential (1 unit/acre or less) Moderate-intensity active open space (parks with biking, jogging, etc.) Conversion to moderate intensity agriculture (orchards, hay fields, etc.) Paved trails Building of logging roads Utility corridor with access/maintenance road Forestry (cutting of trees only)
Low	Passive open space (hiking, bird-watching, etc.) Unpaved trails Utility corridor without road or vegetation management.

Table 17E.070.110-3

Wetland Category	Habitat Score	Wetland Minimum Buffer Width (in feet)		
		<i>Low Impact</i>	<i>Moderate Impact</i>	<i>High Impact</i>
I and II	29-36	100	150	200
	20-28	75	110	150
	< 20	50	75	100
III	20-28	75	110	150
	<20	40	60	80
IV		25	40	50

3. If a Type I wetland is classified with at least one of the following special characteristics the following buffer table shall apply:

Table 17E.070.110-4

Type I – Special Characteristics	Low Impact	Moderate Impact	High Impact
Vernal Pool	100	150	200
Vernal Pool with regional plan	40	60	80
Natural Heritage Wetland	125	190	250
Bogs	125	190	250
Alkali	100	150	200
Riparian Forest	Buffer width to be based on score for habitat functions or water quality functions		

C. Increased Wetland Buffer Zone Width.

The City may require increased buffer zone widths on a case-by-case basis as determined by the director when a larger buffer is necessary to protect wetland functions and values. This determination shall be supported by appropriate documentation showing that it is reasonably related to protection of the functions and values of the wetland. The documentation must include but not be limited to the following criteria:

1. The wetland is used by a plant or animal species listed by the federal government or the state as endangered, threatened, sensitive, or documented priority species or habitats, or essential or outstanding potential habitat for those species, or has unusual nesting or resting sites such as heron rookeries or raptor nesting trees; or
2. The adjacent land is susceptible to severe erosion and erosion control measures will not effectively prevent adverse wetland impacts; or
3. The adjacent land has minimal vegetative cover or slopes greater than thirty percent.

D. Reduction of Standard Wetland Buffer Zone Width.

The City may reduce the standard wetland buffer zone width on a case-by-case basis as determined by the director, consistent with Wetlands in Washington State, Volume 2, Protecting and Managing Wetlands, Guidance on Buffers and Ratios (Appendix 8-D) as revised, if:

1. For wetlands that score moderate or high for habitat (twenty points or more for the habitat functions) the width of the buffer can be reduced if the following criteria are met:
 - a. A relatively undisturbed vegetative corridor of at least one hundred feet in width is protected between the wetland and any other priority habitats; and
 - b. The protected area is preserved by means of easement, covenant, or other measure;
 - c. Measures identified in SMC 17E.070.110(C)(2) (Table 17E.070.110-5) are taken to minimize the impact of any proposed land use or activity
2. For wetlands that score less than twenty points for habitat, the buffer width can be reduced to that required for moderate land-use impacts by

applying the following measures to minimize the impacts of the proposed land uses or activities:

Table 17E.070.110-5

Disturbance	Examples of Measures used to Minimize Impacts
Light	Direct lights away from wetland
Noise	Locate activity that generates noise away from wetland
Toxic runoff	Route all new untreated runoff away from wetland while ensuring wetland is not dewatered, establish covenants limiting use of pesticides within 150', may apply integrated pest management
Stormwater runoff	Retrofit stormwater detention and treatment for roads and existing adjacent development, prevent channelized flow from lawns that directly enters buffer
Change in water regime	Infiltrate or treat, detain, and disperse in buffer new runoff from impervious surfaces and new lawns
Pets and human disturbance	Use privacy fencing; plant appropriate vegetation to discourage disturbance
Dust	Use best management practices to control dust

E. Standard Buffer Width Averaging.

Wetlands may contain significant variations in sensitivity due to existing physical characteristics that may justify buffer width averaging. Standard wetland buffer zones may be modified by averaging buffer widths or a combination of averaging and reduction. Wetland buffer width averaging shall be allowed only where the applicant demonstrates all of the following:

1. Averaging will provide the necessary biological, chemical and physical support necessary to protect the wetland in question, taking into account the type, intensity, scale and landscape location of the proposed land use;
2. The land uses causing the least disturbance would be located adjacent to areas where buffer width is reduced and that such land uses are guaranteed in perpetuity by covenant, deed restriction, easement, or other legally binding mechanism;
3. The total area contained within the wetland buffer after averaging is not less than that contained with the standard buffer prior to averaging. In no instance shall the buffer width be reduced by more than fifty percent of the standard buffer or be less than twenty-five feet.

F. Wetland Buffer Maintenance.

Except as otherwise specified wetland buffer zones shall be retained in their natural condition and free from mowing or other cutting activity, except for the removal of noxious weeds. Where buffer disturbances have occurred before or during construction, revegetation with native vegetation shall be required.

G. Permitted Uses in a Wetland Buffer Zone. Regulated activities shall not be allowed in a buffer zone except for the following:

1. Activities having minimal adverse impacts on buffers and no adverse impacts on wetlands. These may include low-intensity, passive recreational activities such as trails, non-permanent wildlife watching blinds, short-term scientific or education activities, and sport fishing or hunting. Pervious pedestrian trails may be allowed in a wetland for minor crossings only and with minimal impacts. Trails may be allowed in the outer twenty five percent of a wetland buffers and should be designed to avoid removal of significant trees. Such trails are limited to no more than five feet in width.
2. Storm water management facilities, including biofiltration swales, designed according to the City of Spokane Stormwater Management Manual as revised, and chapter 17D.060 SMC Stormwater Facilities, if no reasonable alternative on-site location is available within the meaning of subsection SMC 17E.070.130, and if sited and designed so that the buffer zone as a

whole provides the necessary biological, chemical and physical protection to the wetland in question, taking into account the scale and intensity of the proposed land use. Biofiltration swales will take into account the scale and intensity of the proposed land use, be located in the outer twenty five percent of a Category III or IV wetland buffer provided that no other location is feasible, and will not degrade the functions and values of the wetland or its buffer.]

H. Structural Setbacks from Buffers.

Unless otherwise provided, buildings and other accessory structures shall be set back a distance of ten feet from the edges of all delineated critical area buffers protecting fish and wildlife habitat conservation and wetland protection areas. The director may reduce the structural setback limit by up to five feet if construction, operation, and maintenance of the building do not create a risk of negative impacts on the adjacent buffer area. Approval of a reduction of the structural setback from the buffer line shall be provided in writing by the director. The following uses may be allowed in the structural setback area:

1. Landscaping;
2. Uncovered decks;
3. Roof eaves and overhangs, maximum of twenty-four inches;
4. Pervious unroofed stairways and steps;
5. Impervious ground surfaces, such as driveways and patios.

SMC 17E.070.120 Reasonable Use Exception

A. Regulated activities shall not be authorized within a wetland or wetland buffer except where it can be demonstrated that an extraordinary hardship exists, or the impact is both unavoidable and necessary, or that all reasonable economic uses are denied, as defined below:

1. **Extraordinary Hardship.** With respect to Category I and II wetlands, an applicant must demonstrate that denial of the permit would impose an extraordinary hardship on the part of the applicant brought about by circumstances peculiar to the subject property.
2. **Unavoidable and Necessary Impacts.** With respect to all other wetlands, the following provisions shall apply. For water-dependent activities, unavoidable and necessary impacts can be demonstrated when:

- a. There are no practicable alternatives which would not involve a wetland or which would not have less adverse impact on a wetland;
 - b. There are no practicable alternatives which would not have other significant adverse environmental consequences.
 3. Storm water management facilities will be considered in wetland buffers with overflow into wetlands or wetland buffers, subject to regulation under the City of Spokane City of Spokane Stormwater Management Manual as revised, chapter 17D.060 SMC Stormwater Facilities, and all other applicable provisions in this chapter.
 4. Where non-water-dependent activities are proposed, the applicant must demonstrate that:
 - a. The basic project purpose cannot reasonably be accomplished using an alternative site in the general region that is available to the applicant and may feasibly be used to accomplish the project.
 - b. A reduction in the size, scope, configuration, or density of the project as proposed and all alternative designs of the project as proposed that would avoid, or result in less, adverse impact on a wetland of its buffer will not accomplish the basic purpose of the project; and
 - c. In cases where the applicant has rejected alternatives to the project as proposed due to constraints such as zoning, deficiencies of infrastructure, or parcel size, the applicant has made a reasonable attempt to remove or accommodate such constraints.
- H. Reasonable Use. If an applicant for a development proposal demonstrates to the satisfaction of the director that application of the standards of this chapter would deny all reasonable economic use of the property, development as conditioned shall be allowed if the applicant also demonstrates all of the following to the satisfaction of the director:
1. That the proposed development is water-dependent or requires access to the wetland as a central element of its basic function, or is not water-dependent but has no practicable alternative pursuant to this section;
 2. That no reasonable use with less impact on the wetland and its buffer is possible;
 3. That there is no feasible on-site alternative to the proposed development, including reduction in density, planned unit development, and/or revision of road and lot layout, that would allow a reasonable economic use with less adverse impacts to wetlands and wetland buffers;

4. That the proposed development will not jeopardize the continued existence of species listed by the federal government or the state as endangered, threatened, sensitive, or documented priority species or priority habitats;
 5. That any and all alterations to wetlands and wetland buffers will be mitigated as provided in SMC 17E.070.040;
 6. That there will be no damage to nearby public or private property and no threat to the health or safety of people on or off the property; and
 7. That the inability to derive reasonable economic use of the property is not the result of actions by the applicant, or the present or prior owner of the property, in segregating or dividing the property and creating the undevelopable condition after the effective date of this chapter.
- I. Mitigation will be required for impacts to a wetland or wetland buffer caused by unavoidable and necessary, extraordinary hardships, and reasonable use exceptions to standards.
- J. Prior to granting any special exception under this section, the director shall make written findings on each of the items listed above.

17E.070.130 Mitigation

Wetland mitigation shall be consistent with Wetland Mitigation in Washington State, Parts 1 and 2 (2006) as amended from time to time, to provide consistency for applicants who must also apply for state and federal permits.

- A. Conditions. As a condition of any permit or approval allowing alteration of wetlands or associated buffers, the applicant will engage in the restoration, creation, rehabilitation, enhancement, or preservation of wetlands in order to offset the impacts resulting from the applicants or violators actions. The applicant will develop an appropriate mitigation plan that provides for mitigation measures as outlined below. Wetland mitigation means the use of any or all of the following action listed in descending order of preference (mitigation sequencing):
1. Avoiding the impact altogether by not taking a certain action or parts of an action;
 2. Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts;
 3. Rectifying the impact by repairing, rehabilitating or restoring the affected environment;

4. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action;
 5. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments; or
 6. Monitoring the impact and the compensation project and taking appropriate corrective measures. Mitigation may include a combination of the above measures.
- B. Performance Standards. Compensatory mitigation must follow a mitigation plan which includes the components listed in subsection D. All mitigation plans must meet the minimum performance standards set forth in subsection C.
- C. Wetlands Restoration, Creation, Rehabilitation, Enhancement, and Preservation.
1. Any person who degrades wetlands must restore, create, rehabilitate, enhance, or enhance preserve equivalent areas or greater areas of wetlands than those altered in order to compensate for loss of wetland acreage or functions.
 2. Acreage Replacement Ratio. The following standard ratios apply to compensatory wetland mitigation that is in-kind. If a proposal seeks to eliminate a functional wetland through development, that loss must be compensated through creation or restoration mitigation. This strategy meets the no net loss standard for wetland function and value. The first number specifies the acreage of wetlands requiring replacement and the second specifies the acreage of wetlands altered.

Table 17E.070.130-1

Category and Type of Wetland Impacts	Type of Wetland Mitigation				
	Re-establishment or creation	Rehabilitation only ¹	Re-establishment or creation (R/C) and Rehabilitation (RH) ¹	Re-establishment or creation (R/C) and Enhancement (E) ¹	Enhancement Only ¹
All Category IV	1.5:1	3:1	1:1 R/C and 1:1 RH	1:1 R/C and 2:1 E	6:1
All Category III	2:1	4:1	1:1 R/C and 2:1 RH	1:1 R/C and 4:1 E	8:1
Category II Forested	4:1	8:1	1:1 R/C and 4:1 RH	1:1 R/C and 6:1 E	16:1
Category II Vernal Pool	2:1 Compensation must be seasonally ponded wetland	4:1 Compensation must be seasonally ponded wetland	1:1 R/C and 2:1 RH	Case-by-case	Case-by-case
All other Category II	3:1	6:1	1:1 R/C and 4:1 RH	1:1 R/C and 8:1 E	12:1
Category I Forested	6:1	12:1	1:1 R/C and 10:1 RH	1:1 R/C and 20:1 E	24:1
Category I – based on score for functions	4:1	8:1	1:1 R/C and 6:1 RH	1:1 R/C and 12:1 E	16:1
Category I Natural Heritage site	Not considered possible ²	6:1 Rehabilitation of a Natural Heritage Site	R/C not considered possible ²	R/C not considered possible ²	Case-by-case
Category I Alkali	Not considered possible ²	6:1 Rehabilitation of an alkali wetland	R/C not considered possible ²	R/C not considered possible ²	Case-by-case
Category I Bog	Not considered possible ²	6:1 Rehabilitation of a bog	R/C not considered possible ²	R/C not considered possible ²	Case-by-case

¹ Table 17E.070.130-1 These ratios are based on the assumption that the rehabilitation or enhancement actions implemented represent the average degree of improvement possible for the site. Proposals to implement more effective rehabilitation or enhancement actions may result in a lower ratio, while less effective actions may result in a higher ratio. The distinction between rehabilitation and enhancement is not clear-cut. Instead rehabilitation and enhancement actions span a continuum. Proposals that fall within the gray area between rehabilitation and enhancement will result in a ratio that lies between the ratios for rehabilitation and the ratios for enhancement.

² Table 17E.070.130-1 Natural Heritage sites, alkali wetland considered irreplaceable wetlands because they perform functions that cannot be replaced through compensatory mitigation. Impacts to such wetlands would therefore result in a net loss of some functions no matter what kind of compensation is proposed.

3. Increased Replacement Ratio.

The standard replacement ratio may be increased under the following circumstances:

- a. high degree of uncertainty as to the probable success of the proposed restoration or creation;
- b. significant period of time between destruction and replication of wetland functions;
- c. projected losses in functional value and other uses, such as recreation, scientific research and education, are relatively high;
- d. not possible to create or restore same type of wetland;
- e. off-site compensation is offered.

4. Decreased Replacement Ratio. The standard replacement ratio may be decreased under the following circumstances: scientifically supported evidence which demonstrates that no net loss of wetland function or value is attained under the decreased ratio. In all cases, a minimum acreage replacement ratio of 1:1.5 is required.

5. Wetland Enhancement.

- a. Any applicant proposing to degrade wetlands may propose to enhance existing wetlands in order to compensate for wetland losses. Applicants proposing to enhance wetlands must identify how enhancement conforms with the overall goals and requirements of the wetlands protection program.
- b. A wetlands enhancement compensation project will be considered, if enhancement for one function and value will not degrade another function or value. Acreage replacement ratios may be increased up to one hundred percent to recognize existing functional values. Category I wetlands may not be enhanced.

6. In-Kind/Out-Of-Kind Mitigation. In-kind mitigation must be provided except where the applicant can demonstrate that:

- a. The wetland system is already degraded and out-of-kind replacement will result in a wetland with greater functional value;

- b. Technical problems such as exotic vegetation and changes in watershed hydrology make implementation of in-kind mitigation impossible.

Where out of-kind replacement is accepted, greater acreage replacement ratios may be required to compensate for lost functional values.

- 7. On-Site/Off-site Mitigation. On-site mitigation shall be provided except where the applicant can demonstrate that:
 - a. The hydrology and ecosystem of the original wetland and those who benefit from the hydrology and ecosystem will not be damaged by the on-site loss; and
 - b. On-site mitigation is not scientifically feasible due to problems with hydrology, soils, or factors such as other potentially adverse impacts from surrounding land uses; or
 - c. Existing functional values at the site of the proposed restoration are significantly greater than lost wetland functional values; or
 - d. Established goals for flood storage, flood conveyance, habitat or other wetland functions have been established and strongly justify location of mitigation measures at another site.
- 8. Mitigation Outside of Primary Drainage Basin. Wetland creation or restoration must occur within the same primary drainage basin as the wetland loss occurred, unless the applicant can demonstrate that:
 - a. The hydrology and ecosystem of the original wetland and those who benefit from the hydrology and ecosystem will not be substantially damaged by the loss within that primary drainage basin; and
 - b. In-basin mitigation is not scientifically feasible due to problems with hydrology, soils, or other factors such as other potentially adverse impacts from surrounding land uses; or
 - c. Existing functional values in a different primary drainage basin are significantly greater than lost wetland functional values; or
 - d. Established goals for flood storage, flood conveyance, habitat or other wetland functions have been established and strongly justify location of mitigation measures in a different primary drainage basin.
- 9. Mitigation Site Selection. In selecting mitigation sites, applicants must pursue siting in the following order of preference:

- a. upland sites which were formerly wetlands;
 - b. degraded upland sites generally having bare ground or vegetative cover consisting primarily of exotic introduced species, weeds, or emergent vegetation; and
 - c. other upland sites.
 10. Timing. Where feasible, mitigation projects are to be completed prior to activities that will disturb wetlands. Bonding is required if mitigation projects cannot be completed prior to project completion. Construction of mitigation projects must be timed to reduce impacts to existing wildlife and flora.
- D. Components of Mitigation Plans. All wetland restoration, creation, rehabilitation, enhancement, and/or preservation projects required pursuant to this chapter, either as a permit condition or as the result of an enforcement action, must follow a mitigation plan prepared by qualified wetland professionals meeting City requirements. The applicant or violator must receive written approval of the mitigation plan prior to commencement of any wetland restoration, creation, or enhancement activity. The mitigation plan must contain at least the following components:
1. Baseline Information. A written assessment and accompanying maps of the impacted wetland including, at a minimum, wetland delineation; existing wetland acreage; proposed wetland impacts; vegetative, faunal and hydrologic characteristics; soil and substrate conditions; and topographic elevations. If the compensation site is different from the impacted wetland site, baseline information should also include: the watershed; surface hydrology; existing and proposed adjacent land uses; proposed buffers; and ownership.
 2. Environmental Goals and Objectives. A written report must be provided identifying goals and objectives and describing; site selection criteria; compensation goals; target evaluation species and resource functions; dates for beginning and completion; and a complete description of the functions and values sought in the new wetland. The goals and objectives must be related to the functions and values of the original wetland, or if out-of-kind, the type of wetland to be emulated. The report must also include an analysis of the likelihood of success of the compensation project at duplicating the original wetland, and the long-term viability of the project, based on the experiences of comparable projects, if any.
 3. Monitoring Program. Specific measurable criteria approved by the director, are provided for evaluating whether the goals and objectives of the project are being achieved, and for determining when and if remedial action or contingency measures should be implemented. Such criteria

may include water quality standards, survival rates of planted vegetation, species abundance and diversity targets, habitat diversity indices, or other ecological, geological or hydrological criteria. The mitigation plan manager must assure work is completed in accordance with the mitigation plan and, if necessary, the contingency plan. The monitoring program will continue for at least five years from the date of plant installation. Monitoring will continue for ten years where woody vegetation (forested or shrub wetlands) is the intended result. These communities take at least eight years after planting to reach eighty percent canopy closure. Reporting for a ten year monitoring period shall occur in years one, two, three, five seven and ten. Monitoring in all instances shall be bonded. Reporting results of the monitoring data to the director is the responsibility of the applicant.

4. Detailed Construction Plans. Written specifications and descriptions of mitigation techniques are to be provided, as specified by the director.
5. Construction Oversight. The construction of the mitigation project will be monitored by a qualified wetlands professional to insure that the project fulfills its goals.
6. Contingency Plan. The plan must identify potential courses of action that can be taken when monitoring or evaluation indicates project performance standards are not being met.
7. Permit Conditions. Any mitigation plan prepared pursuant to this section becomes part of the any permit application or approval.
8. Performance Bonds and Demonstration of Competence. The applicant must provide demonstration of administrative, supervisory, and technical competence, financial resources, and scientific expertise of sufficient standing to successfully execute the mitigation plan. The applicant will name a mitigation project manager and provide the qualifications of each team member involved in preparing, implementing and supervising the mitigation plan. This includes educational background and areas of expertise, training and experience with comparable projects. In addition, bonds ensuring fulfillment of the mitigation project, monitoring program, and any contingency measure must be posted in the amount of one hundred and twenty-five percent of the expected project cost of mitigation, plus a factor to be determined to allow for inflation during the time the project is being monitored. An administration fee for the mitigation project may be assessed to reimburse the City for costs incurred during the course of the monitoring program.
9. Consultation with Other Agencies. Applicants are encouraged to consult with federal, state, local agencies having expertise or interest in a mitigation proposal.

17E.070.140 Mitigation Banking

Mitigation banking shall be consistent with chapter 90.84 RCW. Credits from a wetland mitigation bank may be approved for use as compensation for unavoidable impacts when:

- A. The bank is certified under chapter 173-700 WAC;
- B. The director, in consultation with the Department of Ecology, determines that the wetland mitigation bank provides appropriate compensation for the authorized impacts; and
- C. The proposed use of credits is consistent with the terms and conditions of the bank's certification.

Replacement ratios for projects using bank credits shall be consistent with replacement ratios specified in the bank's certification.

Credits from a certified wetland mitigation bank may be used to compensate for impacts located with the service area specified in the bank's certification. In some cases, the service area of the bank may include portions of more than one adjacent drainage basin for specific wetland functions.

17E.070.150 Incentives and Stewardship Options

- A. On-site Density Transfer or Clustering.

For residential development proposals on lands containing potential or identified critical areas, including wetland areas and buffers, the applicant may apply for planned unit development (PUD) under chapter 17G.070 SMC. The maximum number of dwelling units (DU) for a lot or parcel that contains a wetland area and buffer is determined by the site's zoning and by the density bonus allowed in chapter 17G.070 SMC. The use of residential density transfer or clustering through the use of planned unit developments (PUDs) including bonus density is encouraged as a means to protect and preserve wetlands, wetland buffers and fish and wildlife habitat conservation areas. The provisions of chapter 17G.070 SMC shall control the use of density transfer or clustering, planned unit developments, and bonus density.

- B. Property Tax and Income Tax Advantages.

- 1. **Property Tax Relief:** The Spokane County Assessor shall consider the wetland areas and associated buffers contained within this chapter when determining the fair market value of land. Any owner of a wetland area who has dedicated a conservation easement or entered into a perpetual conservation restriction with a department of the local, state, or federal government or a nonprofit organization to permanently control some or all the uses and activities within these areas may request that the Spokane

County Assessor reevaluate that specific area consistent with those restrictions and provisions of open space land current use taxation (see RCW 84.40.030).

2. Federal Income Tax Advantages. There are significant federal income tax advantages that can be realized by an individual or estate for gifts of real property for conservation purposes to local governments or non-profit organizations, such as land trusts. The specific rules on federal income tax deductions can be found in section 170 of the Internal Revenue Code.

C. Stewardship Options

1. The Spokane County Conservation District offers stewardship information, classes, and technical assistance to property owners. Programs include shoreline stewardship, forestry, small acreage conservation agriculture, water resources, and soil information.
2. Spokane County Conservation Futures program, initiated in 1994, is funded by a property tax assessed for each home in the county. This tax money is earmarked solely for the acquisition of property and development rights. These funds acquire lands or future development rights on lands for public use and enjoyment. The Conservation Areas are defined areas of undeveloped land primarily left in its natural condition. These areas may be used for passive recreational purposes, to create secluded areas, or as buffers in urban areas. Conserved lands include wetlands, farmlands, steep hillsides, river corridors, viewpoints and wildlife habitats and corridors.

17E.070.160 Administration

- A. The department director identified in Chapter 17A.010 SMC ("director") shall administer and interpret the provisions of this chapter, except as specifically provided. The director is authorized to adopt, in accordance with administrative procedures set by ordinance, such rules as are necessary to implement the requirements of this chapter and to carry out the duties of the director hereunder. Except as otherwise provided in this chapter, the administrative procedures set forth in Chapters 17G.010 and 17G.060 SMC shall apply to this chapter.
- B. The director may also consult with other City departments and state and federal agencies as necessary to obtain additional technical and environmental review assistance.
- C. The director shall review and analyze all applications for all permits or approvals subject to this chapter. Such applications shall be approved only after the director is satisfied the applications comply with this chapter.

- D. Every City department issuing a permit for development on parcels containing a wetland or buffer shall require the use of best management practices to prevent impacts to wetlands and buffers and to meet the intent of this chapter. Departments shall require mitigation to address unavoidable impacts. All such City departments shall maintain records documenting compliance with this subsection.
- E. Except as otherwise stipulated in this chapter, the administrative procedures set forth in chapter 17A.010 SMC apply to this chapter.

17E.070.170 Violations

- A. It is a violation of this chapter to fail to comply with any provision of this chapter or with any term of any permit condition or approval issued pursuant to this chapter.
- B. It is a violation of this chapter to fail to comply with any order issued pursuant to this chapter or to remove or deface any sign, notice, complaint or order required by or posted in accordance with this chapter.
- C. It is a violation of this chapter to misrepresent any material fact in any application, on plans, or in any other information submitted to obtain any determination, authorization, permit condition, or approval under this chapter.
- D. It is a violation of this chapter to aid and abet, counsel, encourage, hire, command, induce or otherwise procure another to violate or fail to comply with this chapter.
- E. Violations of this chapter are subject to the penalties set forth in Chapter 1.05 SMC.

17E.070.180 Authority to enforce

- A. The director is authorized to enforce this chapter and may call upon other appropriate City departments to assist in enforcement.
- B. It is the intent of this chapter to place the obligation of complying with its requirements upon the owner, occupier, or other person responsible for the condition of the wetland, buffer, land, premises, building, or structure within the scope of this chapter.
- C. No provision of or term used in this chapter is intended to impose any duty upon the City or any of its officers or employees that would subject them to damages in a civil action.

- D. Nothing contained in this chapter is intended to be nor shall be construed to create or form the basis for liability on the part of the City or its officers, officials, employees or agents for any injury or damage resulting from the failure of any owner of property or land to comply with the provisions of this chapter, or by reason or in consequence of any inspection, notice, order, certificate, permission or approval authorized or issued in connection with the implementation or enforcement of this chapter, or by reason of any action or inaction on the part of the City related in any manner to the enforcement of this chapter by its officers, officials, employees or agents.

ADOPTED BY THE CITY COUNCIL ON DECEMBER 03, 2007.

Alexander J. Hogen Jr.
Council President

Mary B. Verner (12.07.07)
Mayor, Mary B. Verner (date)

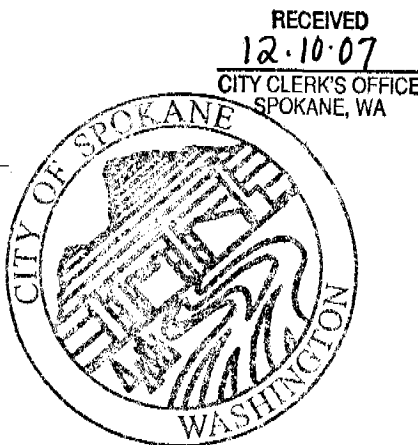
Attest:

Leri H. Foster
City Clerk

Approved as to form:

Michael P. Pardo
Assistant City Attorney

01-08-08
EFFECTIVE DATE



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