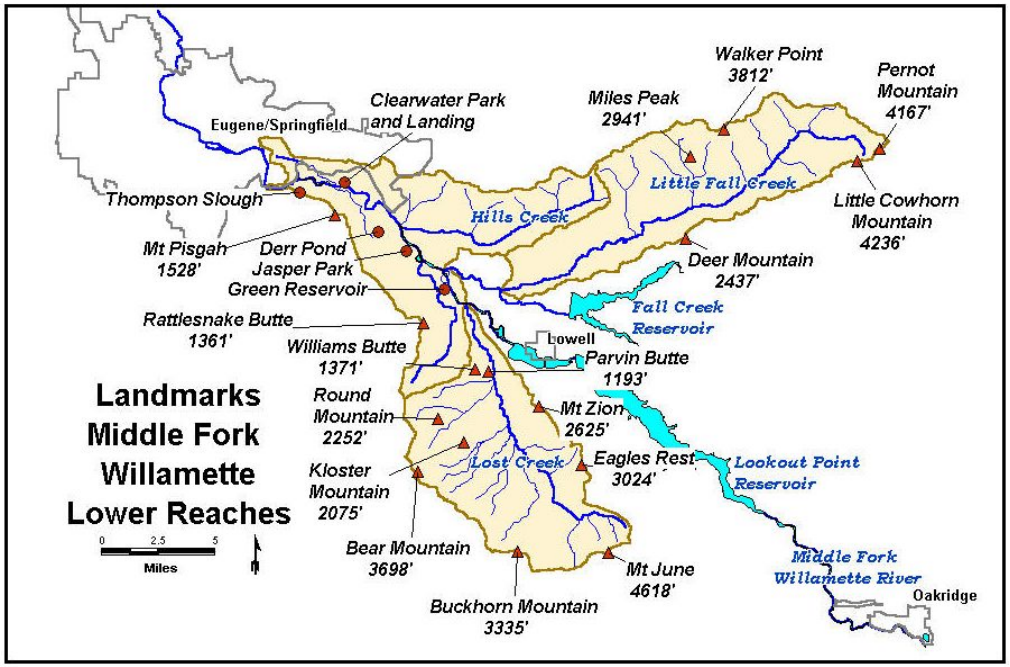
Middle Fork Willamette River
Lower Watersheds



Action Plan

Habitat Protection / Restoration, Water Quality, Education

Middle Fork Willamette Watershed Council

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Middle Fork of the Willamette River
Lower Watersheds
Action Plan

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Introduction

This plan, developed by the Middle Fork Willamette Watershed Council, represents a five-year strategy to improve the lower portions of the watershed. This watershed action plan focuses on the Lower Middle Fork Willamette River below Dexter Dam and the associated tributary watersheds of Hills, Little Fall, and Lost Creeks. It is to be used by any interested person that lives in the watershed, works for an agency or group involved with the Middle Fork of the Willamette River, or who is simply concerned about the river and its drainage area.

This document begins with a brief overview of the watershed, the activities of the Council, and the development of the Action Plan. A section explaining Action Plan goals and activities follows. For many people, the most important part of the document will be the tables included in this second section. These tables outline specific activities that the Council, in collaboration with watershed residents and others, have already implemented or will undertake to improve the condition of the watershed. It is here that you will find the who, what, where, and when of actions. If you are interested in finding out more about conditions in the Lower Middle Fork of the Willamette watershed, a detailed assessment of the area is available from the Council.

This Action Plan is the first step towards a comprehensive strategy to maintain or restore critical habitat areas and improve water quality for the entire Middle Fork Willamette River Basin. The Council, in collaboration with the Forest Service and others, is currently monitoring water quality throughout the basin and will continue to assess basin-wide watershed conditions. This water quality monitoring has served as a useful tool for understanding watershed conditions and to promote the Council's volunteer actions and education programs. In the future, the Council will establish habitat restoration and protection action priorities for the areas not covered by this Action Plan.

The Action Plan Area includes the **Lower Middle Fork Willamette River below Dexter Dam** and the associated tributary watersheds of **Hills**, **Little Fall**, and **Lost Creeks** (Figure 1). It is important to note that the watersheds and stream segments encompassing Fall Creek (from the dam to the confluence) and Wallace Creek were not included in this Action Plan.[*] The total Action Plan Area encompasses 108,026 acres, a little over 12% of the entire 865,920 acre Middle Fork Willamette River Basin. The Action Plan Area is divided into three watersheds:

The Lower Middle Fork Willamette Watershed. The watershed encompasses the river from the mouth of Lost Creek to the confluence with the Coast Fork. This watershed includes Hills Creek, all other tributary streams and surrounding upland areas. For the riparian and fisheries portions of this plan, the Action Plan Area is extended at the base of Dexter Dam to include the channel and floodplain area along the river.

Little Fall Creek Watershed. The watershed encompasses the creek to its confluence with Fall Creek and all tributary streams and surrounding upland areas.

Lost Creek Watershed. The watershed includes the creek to its confluence with the Middle Fork of the Willamette River and all tributary streams and upland areas.

The Council is focusing this Action Plan on the lower portions of the Middle Fork Willamette River watershed because:

1) There is a large concentration of private lands and there have been no assessments completed for these areas;

2) The area has the highest population density in the Middle Fork Willamette Watershed with continuing land development and population growth; and

[*] This Action Plan is based on information from the *Lower Middle Fork Willamette River Watershed Assessment*. In order to limit the geographic scope of the project, the watershed assessment examined conditions in the 5th-field watersheds defined by Lost Creek, Little Fall Creek, and the tributaries draining into the lower river segments. The boundaries of the watershed assessment did not encompass Fall Creek or Wallace Creek.

3) There are significant riparian and aquatic habitats along the river and the tributary streams.

The Action Plan Area is a mix of public and private lands. Figure 2 shows the landownership patterns, which vary by watershed. Private industrial forestlands are the largest ownership category, covering 49,521 acres, or 46% of the Action Plan Area. Most of the industrial forestlands are concentrated in the Little Fall (70% of this watershed's area) and Lost Creek (42% of this watershed's area) watersheds. Approximately 27% of the Action Plan Area is in non-industrial forest ownership (which includes small woodlots, rural residential, and agricultural lands), with the largest concentration in the Lower Middle Fork Willamette watershed (60% of this watershed's area). Public lands occupy about 27% of the Action Plan Area, with most under Bureau of Land Management (17%) or Forest Service management (8%). Lost Creek Watershed has the largest concentration of public lands (40% of the watershed's area), primarily managed by the Bureau of Land Management.

The watershed is on the edge of the growing Eugene-Springfield metropolitan area, with portions of the Springfield urban growth boundary along the lower portions of the river. There are community centers at Jasper and Pleasant Hill, with surrounding rural residential areas. While agriculture, timber production, and other natural resource industries are key parts of the local economy, the employment base within the Lower Middle Fork Willamette River Watersheds continues to transition from local natural resources to a commuting population that works in the Eugene-Springfield area.

Figure 1. The Middle Fork Willamette River Lower Watersheds Action Plan Area. The Action Plan area includes the floodplain and riparian forests along the river from Dexter Lake Dam downstream to the confluence with the Coast Fork Willamette River.

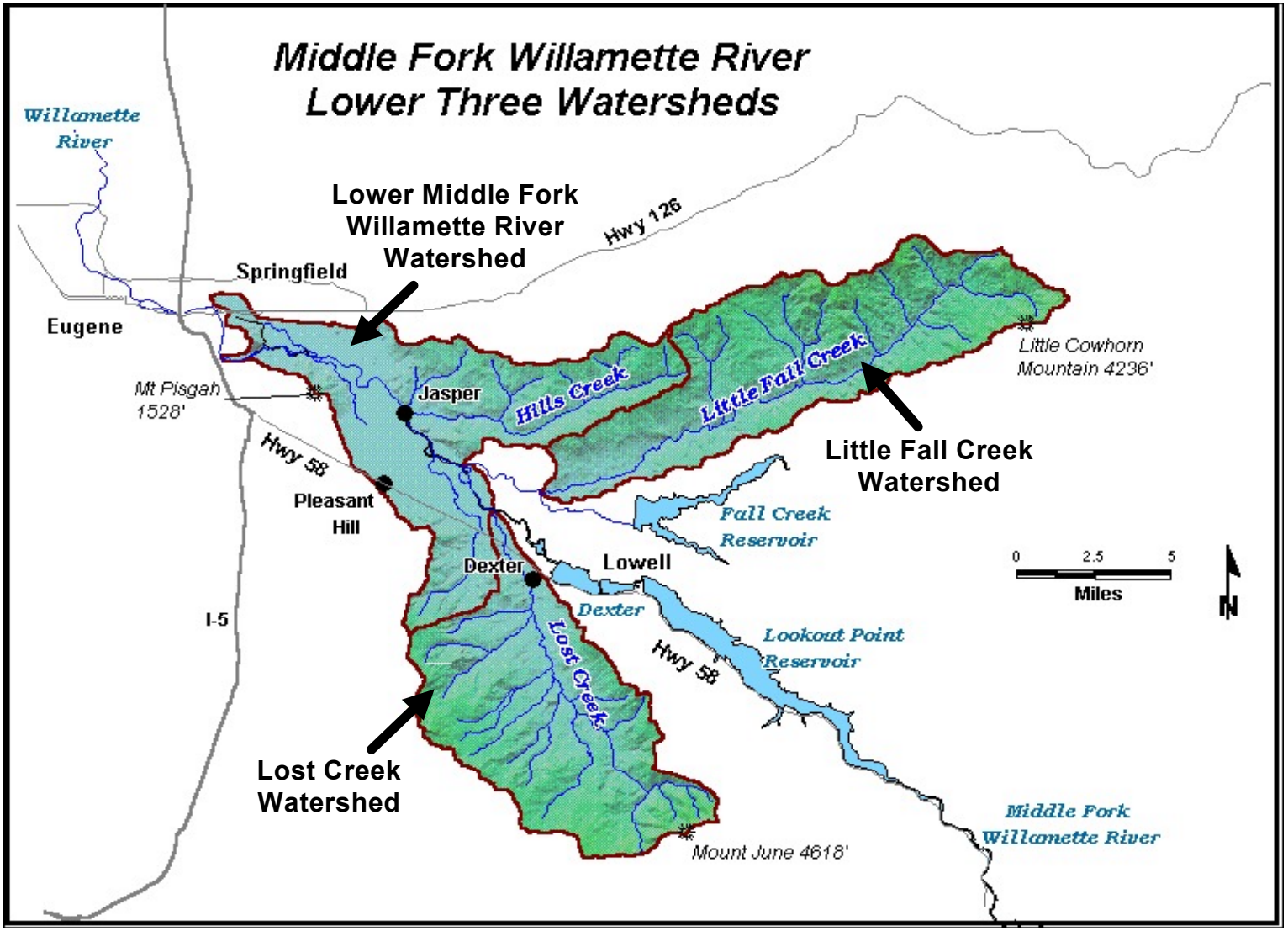
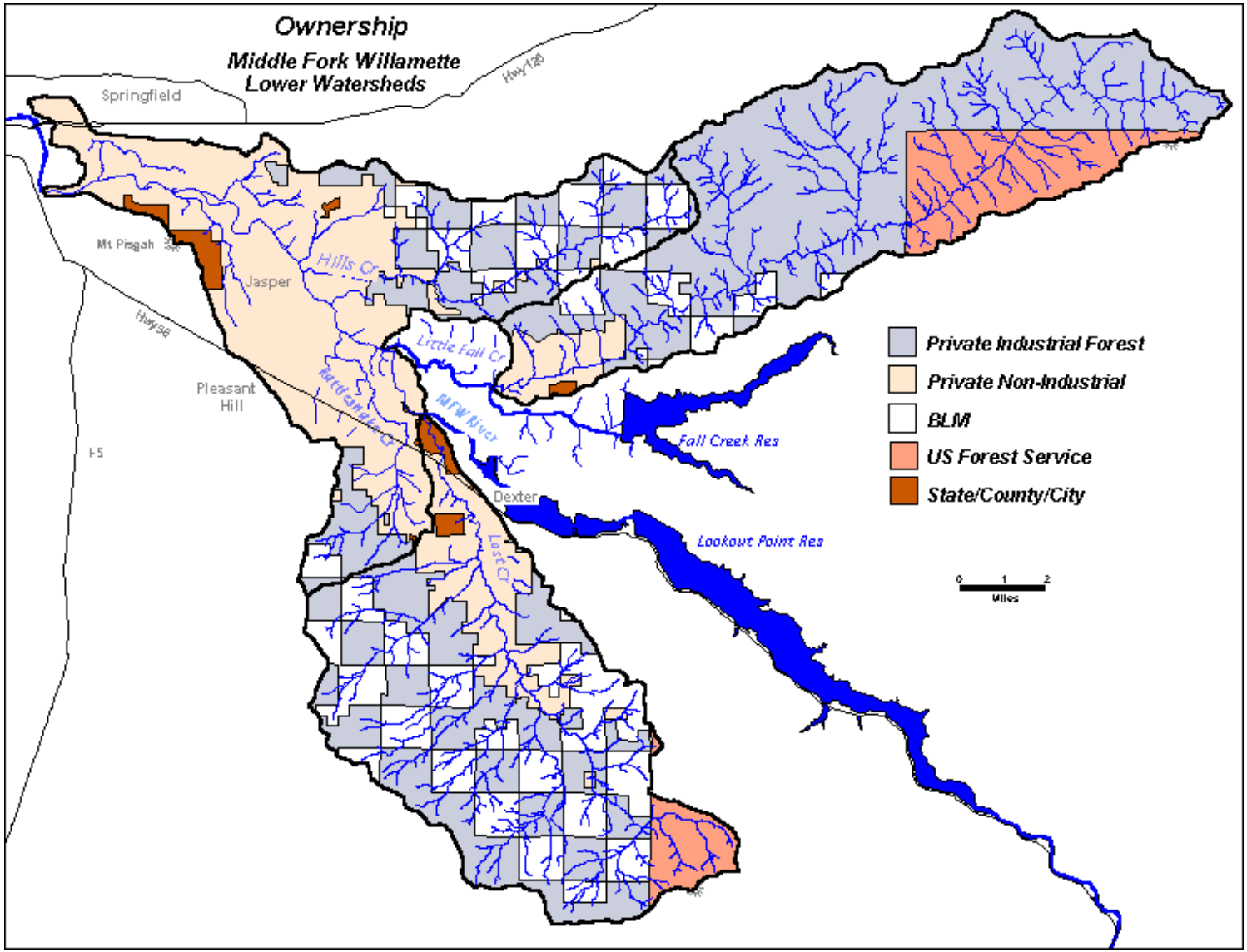


Figure 2. Land ownership patterns in the Action Plan Area.



Watershed Assessment Findings and Recommendations

The watershed assessment examined the area's hydrology (stream flow), riparian areas and floodplain forests, aquatic habitat and fish populations, wetlands, water quality, and sediment production and delivery to streams. The report's key findings and recommendations:

Hydrology

- Urbanization within the Lower Middle Fork Willamette watershed, especially on the edge of the Eugene-Springfield metropolitan area, has extended the area covered in impervious surfaces, which has increased peak (flood flows) stream discharges in local areas. (This urbanization also has implications for water pollutants -- referenced below in the water quality section.)

  Recommendation: Where possible, the Council should advocate for actions that will limit new impervious surfaces (parking lots and other paved areas) and impacts on peak flows and water quality through measures such as storm water detention, sedimentation, and infiltration basins.

- Dams regulate 87% of the land area within the Middle Fork of the Willamette Subbasin. Regulation of discharge by the dams has affected peak flows and the amount of time that floodplains are underwater. Changes in the timing and magnitude of floods has affected the establishment of pioneer plant species such as cottonwoods and reduced the formation of side channel habitat, which has impacted fish habitat.

  Recommendation: In cooperation with the Army Corps of Engineers, the Council should explore mechanisms for increasing the duration and magnitude of channel-forming peak flows to help maintain key ecological processes.

- Many of the banks along the river channel have been lined with riprap and increased in height to minimize overtopping by floodwaters. These actions have prevented floodwaters from spreading out over the river's wide floodplain, which can result in increased flood damage and other impacts.

  Recommendation: In cooperation with the Army Corps of Engineers and landowners, the Council should explore actions for restoring the river's connection to the floodplain. These actions will reduce flood damage costs, improve water quality, and benefit fish habitat.

Riparian areas and floodplain forests

- Invasive species (also called exotics, or weed species) are those plants, animals, and microbes not native to a region which, when introduced either accidentally or intentionally, out-compete native species for available resources, reproduce prolifically, and dominate regions and ecosystems. Left unchecked, many invasives have the potential to transform entire ecosystems, as native species and those that depend on them for food, shelter, and habitat disappear. Invasive species, especially plants, are a problem in the Action Plan Area. Weed plant species that have invaded habitats, particularly riparian areas, include Himalayan blackberry, Scotch broom, and Japanese knotweed. (More information on invasive species can be found at the Oregon Department of Agriculture's web site at: www.oda.state.or.us/plant/inv_spp/.)

  Recommendation: The Council, in coordination with landowners, local, state and federal agencies, should take the lead in identifying and eradicating invasive plant species.

- There are significant pieces of intact floodplain forests along the Middle Fork Willamette River. Examples include the floodplain riparian system within Elijah Bristow State Park and other areas with various degrees of protection. Over 70% of the floodplain riparian forests along the river are relatively intact with stands of older trees and other native vegetation.

  Recommendation: It is important to connect and extend the intact areas of floodplain forest through voluntary restoration and protection actions and to encourage protection of floodplain forests through voluntary mechanisms such as conservation

easements and selected public fee-title ownership. The Council should work with landowners and government agencies to identify willing landowners within the priority floodplain areas for restoration and protection. Key riparian floodplain protection and restoration areas were identified in the assessment and in the Eugene-Springfield area assessment[*]. Priority areas for protection include lands around the confluence of major tributaries, active floodplains, and islands in the river channel. Figure 3 illustrates key areas along the Lower Middle Fork Willamette River where there are opportunities for riparian and floodplain restoration and protection actions.

The Council should explore restoring streamside areas that are covered in brush, grass, or other invasive weeds. Riparian restoration should include planting native trees and shrubs, which will improve stream shading, large wood recruitment, and wildlife habitat. Key riparian restoration areas include the lower portions of Hills, Lost, and Little Fall Creeks.

Recommendation: Target riparian vegetation restoration in these key areas:

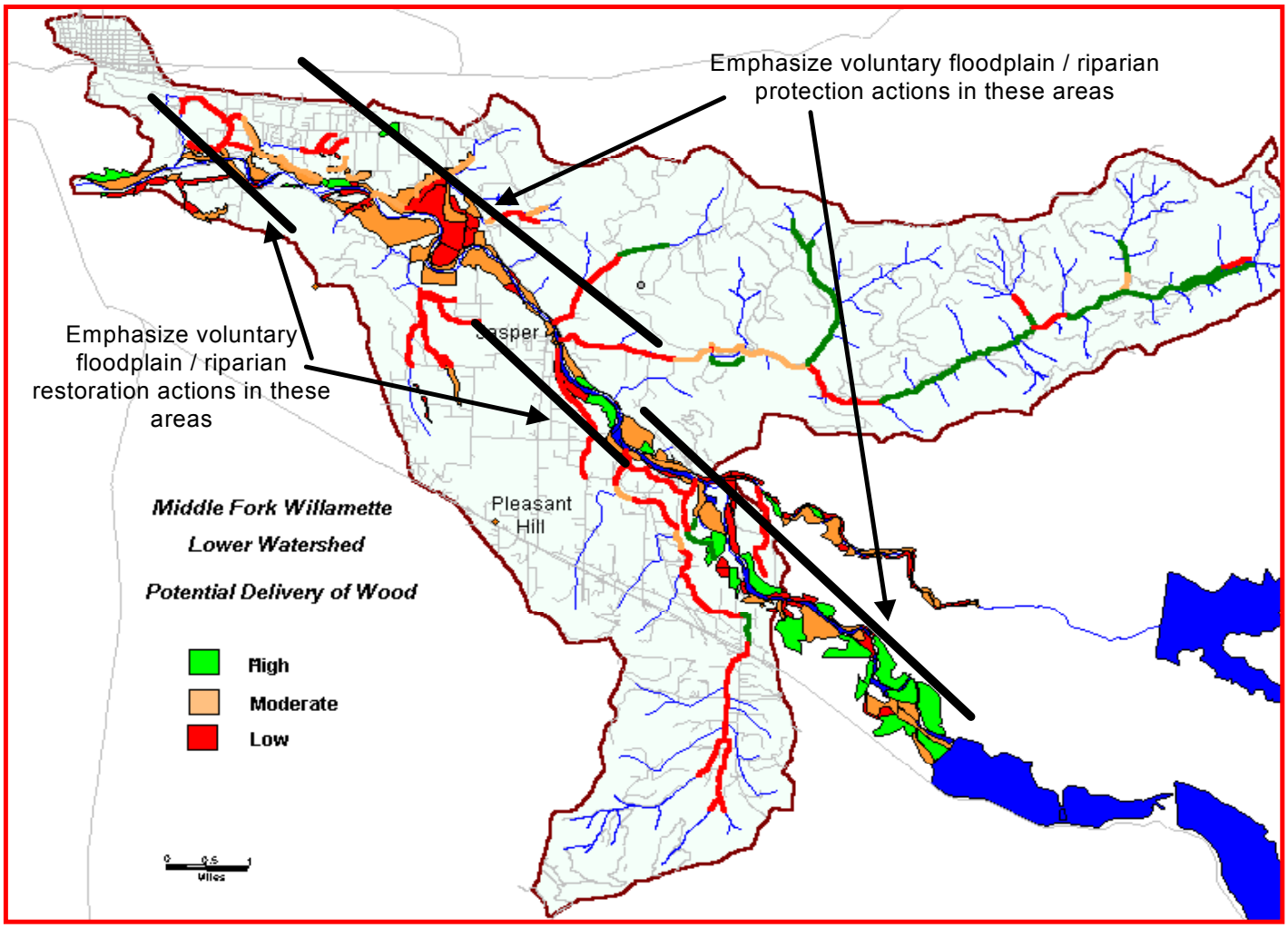
- The lower mainstem of Lost Creek. The lower portions of Lost Creek have areas with limited riparian shade and large conifer trees.

- The tributaries within the Lower Middle Fork watershed include large areas in poor riparian condition, particularly areas covered with brush, blackberries, and other invasive species.

- While shade levels along Hills and Little Fall Creek are, for the most part, adequate, there are opportunities to work with landowners on voluntary riparian restoration to increase native vegetation, especially where blackberries or other non-native vegetation occupies the riparian area.

[*] Aquatic and Riparian Habitat Assessment for the Eugene-Springfield Area. 2002. Report prepared for the Metropolitan Endangered Species Act Coordinating Team (MECT) by Chip Andrus and Jenny Walsh.

Figure 3. Riparian and floodplain restoration and protection opportunity areas along the Lower Middle Fork Willamette River.



Aquatic habitat and fish populations

- The dams, road crossings that create fish passage barriers, and habitat changes to riparian areas have impacted fish populations and aquatic habitat in the Action Plan Area. There has been loss of river channel habitat, especially the loss of side-channels and other backwater areas. The Eugene-Springfield Assessment* completed an extensive assessment of river channel habitats. Some conclusions from this assessment:

    - Over the last six decades, many of the riverbanks along the river channel have been lined with riprap (large angular rock overlaying the banks). The rocks are designed to prevent bank erosion, which over time reduces habitat quality and prevents river meandering. Over 24% of the banks along the lower 7 miles of the Middle Fork of the Willamette River have riprap.

    - Sections along the lower 7 miles of the Middle Fork Willamette River have some of the best quality habitat of Upper Willamette Basin rivers (an area including the lower McKenzie River, main stem Willamette River and Coast Fork Willamette River). These areas include backwater habitats, (side channels and alcoves) which provide early season feeding areas, refuge from fast-flowing water, and protection from main channel predatory fish. These habitats are important rearing areas for juvenile chinook salmon.

  Recommendation: Voluntary river habitat protection efforts should focus on these high quality habitats. Voluntary river habitat restoration actions (reconnecting side channel areas, providing alternatives to riprap on banks) should focus in areas where there was historically high-quality habitat. One area for focusing habitat restoration actions is in the area around the confluence of the Middle Fork and Coast Fork Willamette Rivers.

* Aquatic and Riparian Habitat Assessment for the Eugene-Springfield Area. 2002. Report prepared for the Metropolitan Endangered Species Act Coordinating Team (MECT) by Chip Andrus and Jenny Walsh.

- There has been loss of large wood in the river channel and tributary streams within the Action Plan area. Wood in the channel helps maintain high quality habitat by creating deep pools and cover for fish and other aquatic organisms.

  Recommendation: Opportunities for restoring wood in the channel includes planting riparian trees that will contribute large wood over time. Riparian restoration actions should focus on the lower portions of Hills, Lost, and Little Fall Creeks. In addition, in smaller streams (with bankfull channels less than 60 feet) it is possible to place wood in the channel to create habitat.

Wetlands

- Wetland loss in the Action Plan Area has been concentrated in the Lower Middle Fork Willamette Watershed and along the river. Development pressures in the lower watershed will continue to threaten wetland habitats. Wetlands along the river channel have been reduced through the placement of riprap and other bank stabilizations.

  Recommendation: Voluntary restoration actions should focus on protecting existing wetlands and restoring wetland areas, particularly reconnecting river side-channels and other areas, with emphasis on the Lower Middle Fork Willamette River watershed.

Water Quality

- There has been extensive monitoring of water quality within the Action Plan Area (See Appendix B). The overall water quality of the Middle Fork Willamette River is some of the highest of the entire Willamette River Basin. The water quality monitoring site on the Middle Fork Willamette River at Jasper Bridge (maintained by the Department of Environmental Quality) scored 93 out of a possible 100 points and showed an increasing trend in the score over the past 10 years. The site is ranked in the "excellent" category compared to other sites across the state (2000 Oregon Water Quality Assessment Section 305b Report).

- The Oregon Department of Environmental Quality (DEQ) has set standards for a number of key water quality characteristics. Where these standards are not met, the DEQ "lists" the stream as water quality limited (also know from Section 303(d) of the federal Clean Water Act as the "303(d) list"). The table below outlines the current status of river and tributary streams in the Action Plan area. Waterbodies in this table with a list date of 2002 are still under review by the DEQ and changes in the status of some waterbodies with this date are expected before this list is finalized. The Middle Fork Willamette River is listed as water quality limited for water temperatures that exceed 64 deg. F during the summertime from its confluence with the Coast Fork of the Willamette to Dexter Reservoir (list date 1998). In addition, Little Fall Creek and Lost Creek are also listed as exceeding the temperature standard of 64 deg. F during the summer season (list date 2002).

  Recommendation: Help to restore water temperature regimes by increasing riparian canopies through riparian planting projects along the lower portions of Hills, Lost, and Little Fall Creeks. Support temperature regulation of flow discharges from the upstream USACE dams to more closely maintain pre-dam temperatures for the main stem Middle Fork Willamette River.

- Urbanization within the Lower Middle Fork Willamette watershed, especially on the edge of the Eugene-Springfield metropolitan area, has extended the area covered in impervious surfaces, which has increased peak (flood flows) stream discharges in local areas along with pollutants associated with urban area stormwater.

  Recommendation: Where possible, the Council should advocate for actions that will limit new impervious surfaces (parking lots and other paved areas) and impacts on peak flows and water quality through measures such as storm water detention, sedimentation, and infiltration basins.

Summary of the current water quality status for major stream segments in the Action Plan Area (DEQ - Water Quality Limited Streams Database, November 2002).

Waterbody Name	River Mile	Parameter	Season	List Date	Listing Status
Little Fall Creek	0 to 20.6	Temperature	September 15 - June 30	2002	303(d) List
Little Fall Creek	0 to 20.6	Temperature	Summer	2002	Attaining Criteria/Uses
Little Fall Creek	0 to 20.6	Sedimentation		1998	Insufficient/No Data
Little Fall Creek	0 to 20.6	Habitat Modification		2002	Water Quality Limited Not Needing a TMDL
Lost Creek	0 to 14.7	Dissolved Oxygen	June 1 - September 30	2002	303(d) List
Lost Creek	0 to 14.7	Dissolved Oxygen	October 1 - May 31	2002	303(d) List
Lost Creek	0 to 14.7	pH	June 1 - September 30	2002	Attaining Criteria/Uses
Lost Creek	0 to 14.7	Sedimentation		1998	Insufficient/No Data
Lost Creek	0 to 14.7	Temperature	Summer	2002	Segment Modified
Lost Creek	0 to 8.2	Temperature	Summer	2002	303(d) List
Lost Creek	0 to 8.2	Temperature	September 15 - June 30	2002	303(d) List
Lost Creek	13.6 to 14.7	Temperature	Summer	2002	303(d) List
Lost Creek	8.2 to 13.6	Temperature	September 15 - June 30	2002	303(d) List
Lost Creek	8.2 to 13.6	Temperature	Summer	2002	Attaining Criteria/Uses
Middle Fork Willamette River	0 to 15.6	Temperature	Summer	1998	303(d) List
Middle Fork Willamette River	0 to 15.6	Chlorophyll a	Summer	1998	Attaining Criteria/Uses
Middle Fork Willamette River	0 to 15.6	Dissolved Oxygen	Summer	1998	Attaining Criteria/Uses
Middle Fork Willamette River	0 to 15.6	Dissolved Oxygen	Year Around	1998	Attaining Criteria/Uses
Middle Fork Willamette River	0 to 15.6	Fecal Coliform	Summer	1998	Attaining Criteria/Uses

Waterbody Name	River Mile	Parameter	Season	List Date	Listing Status
Middle Fork Willamette River	0 to 15.6	Fecal Coliform	Winter/Spring/Fall	1998	Attaining Criteria/Uses
Middle Fork Willamette River	0 to 15.6	pH	Summer	1998	Attaining Criteria/Uses
Middle Fork Willamette River	0 to 15.6	pH	Winter/Spring/Fall	1998	Attaining Criteria/Uses
Middle Fork Willamette River	0 to 15.6	Sedimentation		1998	Insufficient/No Data
Middle Fork Willamette River	0 to 15.6	Flow Modification		2002	Water Quality Limited Not Needing a TMDL

- Bacteria (*E. coli*) in the water (from livestock, septic systems, and other sources) can also be a concern, but there is very little data on bacteria concentrations in the Action Plan Area.

  Recommendation: Given that Lost Creek and Little Fall Creek are heavily used for recreational swimming, monitoring of these streams to collect baseline bacteria (*E. coli*) data is needed.

- Through both valid water rights and unauthorized uses, water is withdrawn from tributary streams in the summertime. Reducing stream flows through water withdrawals reduces the water quality of the stream by increasing water temperatures and increasing the concentrations of bacteria and other contaminants.

  Recommendation: Explore opportunities with willing landowners in Lost, Hills, and Little Fall Creeks to increase summertime in-stream flows through voluntary actions such as purchase or transfer of water rights.

- There is a need to assess and track water quality in the Action Plan Area and throughout the Middle Fork Willamette River Basin. The Council should implement a coordinated network of monitoring sites throughout the Basin to provide information

on water quality status and track trends over time. A coordinated and comprehensive water quality monitoring network will provide the basis for identifying water quality problems and evaluating the success of actions designed to improve conditions.

Recommendation: Continue to monitor water quality throughout the watershed. Key parameters to monitor include temperature, turbidity, and nutrients. Bacteria (*E. coli*) should be monitored in tributary streams. Extend the basin-wide water quality-monitoring network through collaboration with partner organizations and the training of volunteers. Target intensive water quality monitoring where problem areas (e.g., water temperature in lower watersheds) have been identified.

Sediment

- Dirt and gravel roads, especially when improperly designed and maintained, have the potential to contribute sediment to the river and streams. In addition, under-size culverts at road crossings can contribute large amounts of sediment to the system if they fail during flood events. While road-related sediment contributions have probably declined over time due to road closures, culvert replacements, and better road maintenance efforts, there is not a complete picture of road-generated sediment in the Action Plan Area. Possible actions to reduce road sediment include inventorying drainage patterns and culverts on dirt and gravel roads and taking appropriate action to address identified problem areas.

  Recommendation: Where dirt and gravel road drainage problems are identified, work with landowners, the County, and other roadway agencies on voluntary actions to improve road drainage and install appropriately sized culverts. In addition, restricting general public access by closing dirt roads with signs, barriers, and gates will help to maintain good drainage and reduce damage during periods of wet weather.

  Recommendation: In conjunction with the Council's water quality monitoring program, track stream turbidity levels in areas where there are high concentrations of gravel / dirt roads and sediment delivery to stream channels may be an issue.

- Very little is known about sediment generated off of agricultural lands in the Lower Middle Fork Willamette watershed. A number of agricultural activities have the potential to contribute sediment, including improperly drained roads, crops, and livestock grazing near streams. Possible actions to reduce agricultural erosion include working with landowners on voluntary practices to improve road drainage, cropping patterns, and grazing activities, especially near streams.

  Recommendation: Work with agricultural landowners to identify areas with high levels of erosion and to use voluntary actions to reduce sediment delivery to streams.

Other Programs / Studies that affect Watershed Council Actions

Protecting and restoring the Middle Fork Willamette Basin is a large and complex undertaking. The Council cannot accomplish the task alone. It will take everyone – watershed residents, landowners, and organizations – working together to restore the watershed. To accomplish this task the Council will need to build on existing relationships and build new partnerships with watershed residents and other organizations. There are numerous government programs and organizations that offer opportunities for the Council to collaborate and coordinate on watershed protection and restoration actions. The following are four programs that provide opportunities to build partnerships:

US Army Corps of Engineers Floodplain Restoration Study

The Army Corps of Engineers is evaluating opportunities to modify existing floodplains in the Willamette Basin to reduce flood damage and restore river function, wetlands, and fish habitat. Currently the Corps is collaborating with the Council and others to study the feasibility of a floodplain restoration project focused on the area along the mainstems of the Middle Fork and Coast Fork Willamette Rivers. The study would include detailed assessment of the potential for restoring hydraulic and ecological function in the area. The intent of the study would be to produce a comprehensive and integrated plan for floodplain restoration and management that would be submitted to Congress for authorization and appropriation of Federal funds for implementation.

Open Space and Recreational Planning

The Lane Council of Governments (LCOG) is studying a coordinated approach to the protection and conservation of open space areas in the vicinity of the Eugene-Springfield metropolitan area, including the lower Middle Fork Willamette River. In conjunction with the focus on examining open space, there are concerns for wildlife corridors, recreation corridors, and reduction in habitat fragmentation. According to LCOG: "As the region continues to prosper and grow, open space will undoubtedly be

lost, while at the same time recreational demand will increase. The challenge is to decide what open space areas are vital to maintaining the region's quality of life and to devise methods to ensure these areas remain intact for future generations. This is the goal of the Metropolitan Regional Parks and Open Space Study." More information about the study can be found at LCOG's web site: http://www.lcog.org/pubs.html

McKenzie River Trust

The McKenzie River Trust is a non-profit 501(c)(3) corporation made up of private, public, and commercial landowners, and others with a common interest in protecting and preserving the river environments in Lane and Douglas counties through private, non-governmental actions. The mission of the McKenzie River Trust is to provide for the care of the waters, wetlands, habitat, scenic and recreational values, and agricultural lands of the river basins for the benefit of the general public and the ecological sustainability of our vital watersheds. These benefits can be obtained, in part, by acquisition or donation of fee title, conservation easement, and other property rights.

The Trust offers unique and sometimes valuable tax benefits for applicable projects in its operation as a non-profit land trust. The McKenzie River Trust is also committed to educational programs and activities that increase the public's appreciation, knowledge, and understanding of the ecologically unique and sensitive lands of the Middle Fork Willamette River Basin. Information about the McKenzie River Trust can be found at their web site: http://www.mckenzieriver.org

East Lane Soil and Water Conservation District

East Lane Soil and Water Conservation District offers technical and financial assistance in planning and applying natural resource conservation practices. The District works with landowners and the Watershed Council to secure funding and offers planning and expertise for implementing a range of projects, including riparian fencing, sediment control, and manure management. The District also works on resource inventories, conservation education, and conservation technology. More information about the District and their mission can be found at the Oregon Association of Conservation District's web site: http://www.oacd.org/

Watershed Council Background and Accomplishments

The Council

The Middle Fork Willamette Watershed Council is a volunteer-based partnership of diverse watershed stakeholders that focuses on promoting sustainability and making the Middle Fork Willamette watershed a better place to live, work, and visit; for now and future generations.

Middle Fork Willamette Watershed Council

Mission Statement

To work together as a community to restore and sustain the ecological integrity and economic viability of the watershed, and promote local control of our future by providing effective voluntary solutions to watershed issues.

The Council began in September of 1997 by holding several meetings in Oakridge. In the fall of 1998, more consistent meetings, with participation from an increased number of interested stakeholders, started taking place in rotating locations within the watershed. By November of 1999, the group received council support funding from OWEB and hired its first coordinator in March of 2000. With a coordinator in place, the Council's outreach efforts increased substantially, leading to an increase in the number of involved stakeholders. The council developed and adopted an operating charter during the summer and fall of 2000, and the Lane County Board of Commissioners formally recognized the Middle Fork Willamette Watershed Council on November 21, 2000.

The Council encourages an "open-door" membership policy. Membership is open to all folks who live in, work in, or are affected in any way by the watershed and its resources (local citizens, private landowners, scientists, industries, recreational users, related community, business and government groups, etc.). Becoming a member is easy: placement on the council mailing list confers Council membership.

The Council usually meets on the third Wednesday of each month. Meeting locations rotate among three communities in the watershed: Springfield, Lowell, and Oakridge. To find out more about how you can become involved in the Middle Fork Willamette Watershed Council, join us for a General Council meeting or simply contact the Council office at 937-9800 or mfwwc@efn.org.

The Steering Committee

The Council maintains a standing Steering Committee that guides the General Council by ensuring continuity among Council activities, monitoring progress toward achieving the Council's mission and goals, and making reports at General Council meetings. The Steering Committee is comprised of no less than seven and no more than 11 members. All members are volunteers from within the General Council membership. Four of the "seats" are designated appointments: one representative each from the Willamette National Forest, Army Corps of Engineers, private timber industry, and environmental interests. The remaining three to seven seats are strictly "at-large." Steering Committee members serve two-year terms, and rotation of members is staggered in order to ensure continuity. The General Council holds affirmation votes regarding Steering Committee membership each year during a designated General Council meeting.

The Steering Committee generally meets the fourth Wednesday of every month at the Council office in Lowell, and meetings are open to anyone interested in attending.

Education and Outreach Committee

In the spring of 2001, a group of Council members formed a standing education and outreach committee, with the goal of promoting watershed education and improving Council outreach methods. Since its inception, committee members have completed several projects, including the development of a Council brochure, Council t-shirts, and a traveling six-panel educational kiosk.

Water Quality Monitoring

During the 2001-2002 school year, a University of Oregon graduate student expanded on the monitoring efforts in the Lost Creek sub-basin by developing a volunteer water quality monitoring plan for the entire Middle Fork Willamette watershed. The plan has received acknowledgment from DEQ and is ready for implementation.

Monthly Mailing

Monthly mailings are sent to all council members one week before the scheduled General Council meeting. Mailings include a two-page newsletter titled "News and Notes," minutes from the prior General Council meeting, and the agenda for the upcoming meeting. The mailings are designed to keep Council members fully engaged in the activities and functions of the Council. Past issues of our meeting minutes and mailings can be downloaded from our web site at www.mfwwc.org.

Workshops and Presentations

Every General Council meeting includes a topical presentation related to ecological, economic, or recreational issues in the watershed. Presentations have covered a diversity of topics, ranging from noxious weeds to western pond turtles to Senate Bill 1010. The July meeting is typically a field trip, and various other recreational and informational field trips occur throughout the year.

The Council presented a one-day conference entitled "Salmon Passage Past the Dams" at the University of Oregon in June of 2001. The conference featured several renowned speakers and drew a large audience.

Watershed Assessments and other Studies

The Forest Service, , Bureau of Land Management and Weyerhaeuser have completed watershed analyses. The completed watershed assessments include:

BLM

Lost Creek Watershed Analysis. 1997. McKenzie Resource Area, Eugene District, Bureau of Land Management.

Weyerhaeuser

Little Fall Creek / Hills Creek watershed analysis. 1997. Weyerhaeuser, Springfield, OR. (Copy of report on file at ODFW Springfield, OR.)

Forest Service

Fall Creek Watershed Analysis. 1995. Willamette National Forest.

North Fork Middle Fork of the Willamette River Watershed Analysis. 1995. Willamette National Forest.

Middle Fork Willamette River Downstream Tributaries Watershed Analysis. 1995. Willamette National Forest.

Salmon Creek Watershed Analysis. 1996. Willamette National Forest.

Upper Middle Fork Willamette River Watershed Analysis. 1996. Willamette National Forest.

Winberry and Lower Fall Creek Watershed Analysis. 1996. Interagency – Willamette National Forest/Eugene District Bureau of Land Management/Army Corps of Engineers.

Lookout Point Watershed Analysis. 1997. Willamette National Forest.

Salt Creek Watershed Analysis. 1997. Willamette National Forest.

Hills Creek Watershed Analysis. 1998. Willamette National Forest.

Upper Middle Fork Willamette River Watershed Analysis Update. 2002. Willamette National Forest.

Participation in Community Events

The Council views participation in community events as a primary goal of its education and outreach efforts and is consistent with its effort to partner with the communities in the watershed. The Council holds educational booths at the Blackberry Jam in Lowell, the Dexter Park Fourth of July, and participates in the general watershed council booth at the Lane County Fair. The council also sponsors Oakridge River Day, a spring river clean-up that occurs in conjunction with the statewide "Down by the Riverside" event. In March of 2003, the Council will co-sponsor the area's first household hazardous waste round-up in Dexter. In addition to these local events, the Council also sponsors events for the statewide Watershed Weeks and participates in National Water Monitoring Day.

Lost Creek Group

A community group in the Lost Creek Watershed cooperates with the Council on voluntary watershed restoration and education actions. To date, the Lost Creek Group has held regular community meetings and a number of educational events. Recent accomplishments include:

- Coordinating a riparian restoration volunteer planting event at Elijah Bristow State Park.
- Conducting a pond site restoration work party at Elijah Bristow Park.
- Organizing a riparian restoration site maintenance work party.

- Coordinating a volunteer fish-sampling project with ODFW that required training nine volunteers who each devoted at least an hour and a half of time each week for eight months. Volunteers were responsible for checking a rotary screw-type fish trap, cataloging the species found and recording the length of salmonids and lamprey.

- Preparing and distributing to all 1000 Dexter mailboxes five newsletters with information on watershed friendly living tips, volunteer and education opportunities, and information on water quality monitoring and restoration (August 2001 to August 2002).

- Conducting water quality testing at eight sites on Lost Creek (and one on Anthony Creek) since 1998. The group also does summertime continuous temperature monitoring at nine sites. The water quality monitoring continues, and the group has enlisted the help of two interns from Pleasant Hill High School.

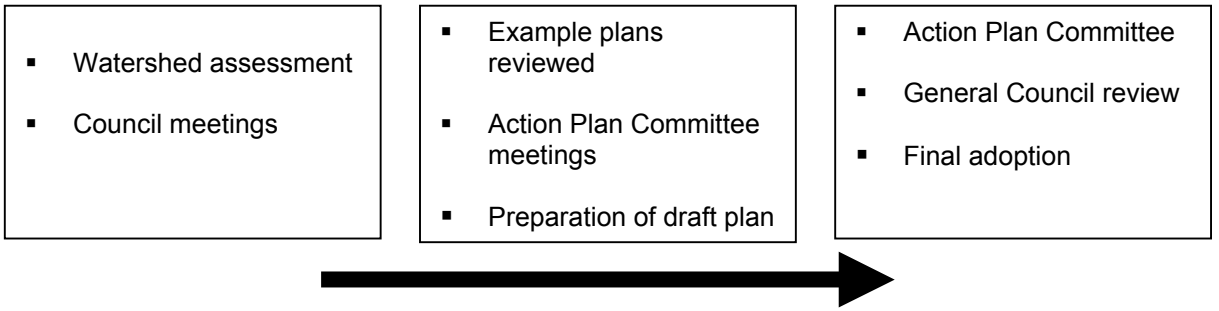
- Recently completing a grant project with a school outreach portion that reached teachers and students in the Pleasant Hill and Lowell School Districts. The project involved three in-class teaching days followed by one or more field classes with hands-on learning about fish, water quality, macro-invertebrates, wetlands, groundwater, and riparian health.

Development and Maintenance of the Action Plan

This action plan is based on the Council's watershed assessment, which provides a technical basis for prioritizing its voluntary watershed restoration activities. Recommendations made in the assessment were considered throughout the action plan's development and are reflected in this document.

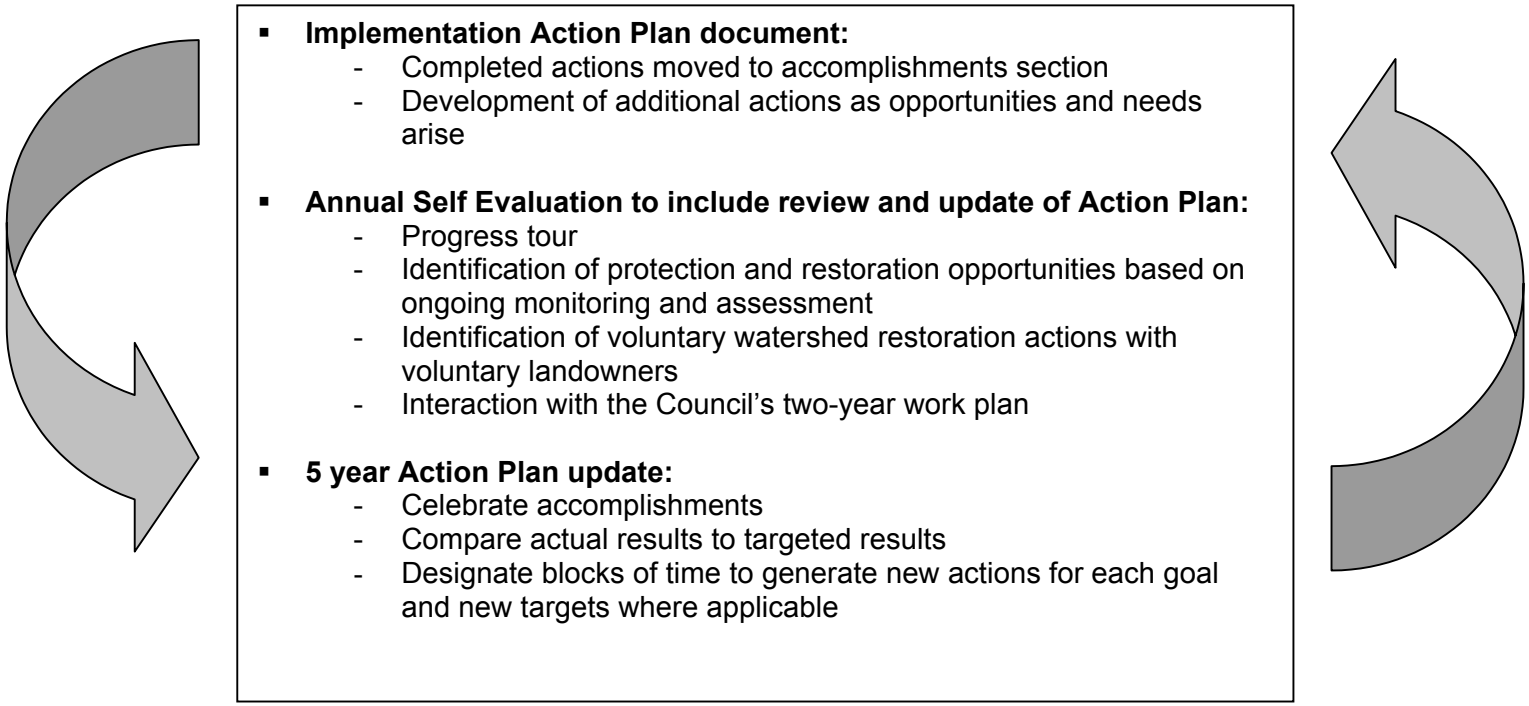
The process of developing the action plan:

Figure 4. Development of Action Plan



As indicated in Figure 5, the plan operates on a five-year time scale in terms of targeted results (which apply to quantifiable activities such as the number of fish barriers addressed). However, many of the Council's activities operate on smaller cycles or are ongoing. An example is the identification of protection and restoration activities for site-specific areas in cooperation with willing landowners. As much as possible, these activities will focus on the areas emphasized in this action plan. As opportunities arise outside of the emphasis areas, they will be evaluated based on their value to the ecosystem, partnership building, community building, and to the overall mission and goals of the Middle Fork Willamette Watershed Council.

Figure 5. Maintenance of the Action Plan



Actions to Meet Council Goals

The Middle Fork Willamette Watershed Council stresses improving fish and wildlife habitat and water quality through community participation, education, and voluntary (not regulatory) actions with landowners and others.

The Middle Fork Willamette Watershed Council and community members developed the six following goals during the action planning process:

- Promote community environmental awareness and good stewardship of the land through education and volunteer opportunities
- Maintain and improve water quality and quantity
- Encourage maintenance or restoration of native ecosystems
- Monitor and assess key watershed resources
- Coordinate activities with government agencies and other organizations
- Track actions and report progress to the Council, landowners, and other interests

Based on information from the watershed assessment and other studies, the Council prioritized actions in the following order

- Education and volunteer opportunities
- Restoring Fish Passage
- Riparian / Floodplain Habitat Restoration and Protection

The multiple tables in this section include the specific actions the Middle Fork of the Willamette Watershed Council plans to take over a five-year period. These actions are categorized under the six action plan goals. Explanations of the table components are listed on the following page.

High Priority Actions

This plan focuses on voluntary actions to benefit to fish populations and water quality. The Council's Action Plan Committee highlighted addressing community and student education, barriers to fish movement, and the protection / restoration of riparian and floodplain vegetation as the most important near-term actions.

Community and Student Education and Volunteer Opportunities

- *Assessment of conditions:* Education, outreach, and volunteer opportunities are essential for providing Middle Fork Willamette Watershed residents with the knowledge they need to make wise choices to restore and protect the health of their watershed. Both children and adults can benefit from information on the status of the watershed's resources, as well as information on the appropriate actions to protect and restore fish and wildlife habitats and water quality. In addition, opportunities for individuals to participate in voluntary activities provide an avenue to learn about the watershed and stewardship actions.

- *Actions to reach targeted results:*

  1) Engage residents in a voluntary water quality monitoring program
  2) Work with local teachers and students on water quality monitoring and habitat restoration projects
  3) Provide watershed stewardship curricula and other supporting materials to local teachers
  4) Attend community events and provide information on Council activities and other actions
  5) Report the results of water quality monitoring efforts and other resource assessments to the Council and community
  6) Provide a newsletter describing Council actions, and providing information on the status of the watershed's resources and avenues for participation in stewardship actions

- *Project monitoring:* Track the number of individuals and organizations contacted through education and outreach efforts; track the number of individuals participating in voluntary activities. Report progress at the Council's annual Self Evaluation and include review and update of Action Plan.

Barriers to Fish Migration

- *Assessment of conditions:* The most common man-made fish migration barrier in the Middle Fork of the Willamette Watershed is the poorly functioning road culvert. A recent inventory investigated stream crossings within the Action Plan Area and found fish passage problems at a large number of crossings. Figure 6 shows a partial list of fish passage problems identified on Lane County roads. This list provides a starting point for addressing fish passage problems by replacing culverts, or retro-fitting existing structures where appropriate.

- *Actions to reach targeted results:* The Council will work with Lane County, ODFW, and private landowners to identify key fish passage barriers and areas where more information is needed to assess fish passage. In collaboration with the County, ODFW and landowners, the Council will secure funding and implement projects to address high priority fish passage issues.

- *Project monitoring:* An Oregon Department of Fish and Wildlife culvert evaluation form will be filled out after the completion of projects to document conditions and establish baseline information. Regularly scheduled visits will be made to project sites, with culvert evaluation forms being updated if changes occur. Report progress at annual Council Self Evaluation and update Action Plan.

Protection and Restoration of Floodplain and Riparian Forest Areas

- *Assessment of conditions:* There are significant pieces of intact floodplain forests along the Middle Fork Willamette River. It is important to connect and extend the intact areas of floodplain forest through voluntary restoration and protection actions. Figure 3 illustrates key areas along the Lower Middle Fork Willamette River where there are opportunities for riparian and floodplain restoration and protection actions. Along the tributary streams within the Action Plan Area, there are extensive riparian areas that are not providing good habitat. These streamside areas are covered in brush, grass, or invasive weeds. Riparian restoration should include planting native trees and shrubs, which will improve stream shading, large wood recruitment, and wildlife habitat. Key areas for riparian vegetation restoration include the lower mainstem of Lost Creek and portions of Hills and Little Fall Creeks.

- Actions to reach targeted results:

    1) Work with the East Lane Soil and Water Conservation District and other partners to identify willing landowners for riparian restoration projects.
    2) Implement riparian restoration projects, particularly in the lower portions (and tributary streams) of Hills, Lost, and Little Fall Creeks.
    3) Work with the Army Corps of Engineers and other partners to identify and implement a comprehensive floodplain restoration strategy along the Middle and Coast Forks of the Willamette River.
    4) Work with the McKenzie River Trust and other organizations to protect key floodplain riparian areas along the river with willing landowners. Voluntary riparian protection measures can include conservation easements, the Conservation Reserve Enhancement (CREP) program, and other incentive programs.

- *Project monitoring:* Photos will be taken at permanently established photo points on a yearly basis to give a general overview of project conditions and to evaluate success (planting survival and other measures). Report progress at annual Council Self Evaluation and update Action Plan.

Figure 6. This table shows a partial list of culverts on Lane County Roads that are fish passage barriers. ODFW priorities are based on fish use and habitat quality (H = High; M= Medium; L = Low). Data courtesy of Arno Nelson, Lane County Public Works.

Road	Road Name	Stream	Subbasin	ODFW Priority	Comments
6220	Jasper Lowell	Un Cr	Fall Cr	M	0.35 miles south of Rd 6225. Culvert OK except riprap stacked below may inhibit fish passage.
6240	Big Fall Cr Rd	Un Cr	Fall Cr	M	0.8 miles past Rd 6250. Step falls 48" onto boulder, then another 2' to Fall Cr. Depth below culvert estimated. Landowner says CT above.
6222	Hills Cr Rd	Un Cr	Hills Cr	M	Double culvert (42"X2) One pipe in use.
6222	Hills Cr Rd	Un Cr	Hills Cr	M	Step falls over 6' of cobble before pool.
6230	Little Fall Cr Rd	Un Cr	Little Fall Cr	H	Three culverts are separated on road (50' between each); 24"CCL,18"CMP,18"CCL from west to east. Each culvert empties onto 20% cascade. The two 18" culverts have 4% slopes, and steps of 12" and 30".
6230	Little Fall Cr Rd	Un Cr	Little Fall Cr	M	Triple culvert (24"x3) One pipe has no drop, two have drops of 10".
6230	Little Fall Cr Rd	Un Cr	Little Fall Cr	M	Double culvert (32" and 24") 32" pipe has a 2% slope. 24" pipe has 4% slope.
6230	Little Fall Cr Rd	Un Cr	Little Fall Cr	H	
6107	Lost Valley Ln	Wagner Cr	Lost Cr	H	Double culvert (60"x2) Most of slope in upper end.
6120	Lost Cr Rd	Middle Cr	Lost Cr	H	0.6 miles south of Rd 6107.
6120	Lost Cr Rd	Un Cr	Lost Cr	M	0.4 miles before Rd 6107. Step falls 4' over 5' of cobble before entering Lost Cr. Depth below culvert estimated.
6120	Lost Cr Rd	Un Cr	Lost Cr	M	0.2 miles before Rd 6104. Double culvert (54"x2) Possible velocity barrier.
6120	Lost Cr Rd	Un Cr	Lost Cr	M	Just before "End Co. maintenance " sign. Double culvert (32"x2) One pipe has 8" drop, other has 12" drop.
6098	Hill Top Dr	Rattlesnake Cr	M Fk Willamette R		The RCBC also runs under the railroad tracks (continuous), money for baffle construction
6227	Pengra Rd	Un Cr	M Fk Willamette R	L	Step falls initial 8' onto rock/dirt then another 2' to pool. Pool about 5 horizontal feet from culvert.
6210	Wallace Cr Rd	Un Cr	Wallace Cr	M	Double culvert (36"x2) Velocity barrier.
6245	Winberry Cr	Un Cr	Winberry Cr	M	

Table Components

The tables on the following pages describe the Council actions necessary to achieve the goals outlined in the Action Plan. The tables have these components:

- *Goals*: Goals set general focus areas for Council attention.
- *Actions*: Actions are the result-based activities that the Council will take. Actions have been established with the following considerations (included as table columns):
  - *Emphasis Area*: The geographic location where an action is focused.
  - *Action Priority:* Based on the key areas -- education, fish passage, riparian / floodplain protection and restoration
  - *Timeline*: The starting and ending points for an action.
  - *Lead Person and Support*: The individuals and organizations committed to carrying out this action.
  - *Resources Needed*: The materials needed to complete the action. Resources can include a variety of items: volunteer hours, money, information, equipment, etc.
  - *Product(s)*: The tangible, end-result of an action.
  - *Evaluation Criteria*: The measure by which the action will be considered successful.

1) Promote Community Environmental Awareness and Good Stewardship of the Land

(Goals and Actions not in any order of importance)

Goal 1: Promote Community Awareness and Good Stewardship of the Land

Action	Priority	Emphasis Area	Lead Person / Organization	Resources Needed	Product(s)	Evaluation Criteria	Time Line
Promote / encourage conservation tools for landowners	**High**	Watershed-wide, focusing on private lands	McKenzie River Trust / East Lane SWCD	Outreach materials; examples of successful approaches	Outreach materials; tour sites; demonstration project	1) Number of landowners contacted; 2) number of measures implemented	Start: Fall 2002 End: Ongoing
Encourage public involvement in Council activities	**High**	Watershed-wide	Watershed Council	Staffing, funding	Newsletters, workshops, attendance at Council meetings / tours/events, demonstration projects	1) Attendance at Council meetings; 2) participation in activities	Start: Ongoing End: Ongoing
Promote proper riparian vegetation / pasture management with agricultural landowners and small rural hobby farms	**High**	Watershed-wide, focusing on private lands	Watershed Council / East Lane SWCD	Outreach materials; examples of successful approaches, funding for implementation	Outreach materials; tour sites	1) Number of landowners contacted; 2) number of measures implemented	Start: Fall 2002 End: Ongoing

Promote knowledge of invasive weed issues and proper management	**High**	Watershed-wide, focusing on private lands	Watershed Council	Outreach materials; examples of successful approaches	Outreach materials; tour sites	1) Number of landowners contacted; 2) number of measures implemented	Start: Fall 2002 End: Ongoing
Develop restoration project s & demonstration projects with residents	**High**	Watershed-wide	Watershed Council	Staff time; funding	Outreach materials; examples of successful approaches	1) Number of demonstration projects; 2) Number of tour participants	Start: Fall 2002 End: Ongoing
Promote watershed education with local, community groups and community events	**High**	Watershed-wide	Dianne Davis	Funding, volunteers	Outreach materials; examples of successful approaches	1) Number of landowners, and community groups contacted	Start: Ongoing End: Ongoing
Provide residents information on water rights and voluntary opportunities for improving in-stream water rights	**High**	Lost Creek	Lost Creek Group and Michael Mattick (Watermaster)	Funding; volunteer coordination	Outreach materials; examples of successful approaches	1) Number of landowners contacted; 2) Number of landowners participating in voluntary actions	Start: Spring 2003 End: Ongoing

2) Maintain and Improve Water Quality and Quantity

(Goals and Actions not in any order of importance)

Goal 2: Maintain and Improve Water Quality and Quantity

Action	Priority	Emphasis Area	Lead Person / Organization	Resources Needed	Product(s)	Evaluation Criteria	Time Line
Restore minimum in-stream flows	**High**	Lost Creek	Lost Creek Group	Funding; volunteer coordination;	Outreach materials; examples of successful approaches, etc	1) Number of landowners contacted; 2) Number of landowners participating in voluntary actions	Start: Spring 2003 End: Ongoing
Promote riparian planting projects in areas with limited shading	**High**	Lower Lost Creek	Lost Creek Group	Funding; volunteer coordination;	1) Implementation of projects; 2) demonstration areas.	1) Number of landowners contacted; 2) Number of landowners participating in voluntary actions; 3) number of acres successfully planted with vegetation	Start: Ongoing End: Ongoing
Track water quality trends	**High**	Through out the MFW Basin	Watershed Council	Funding; volunteer coordination;	1) Monitoring data; 2) evaluation reports; 3) volunteer support and awareness	1) Completion of monitoring evaluation reports	Start: Ongoing End: Ongoing

3) Encourage Maintenance or Restoration of Native Ecosystems

(Goals and Actions not in any order of importance)

Goal 3: Encourage Maintenance and Restoration of Native Ecosystems

Action	Priority	Emphasis Area	Lead Person / Organization	Resources Needed	Product(s)	Evaluation Criteria	Time Line
Replace key culverts inhibiting fish passage	**High**	Watershed-wide	Watershed Council / Lane County Public Works	Fish passage inventory data; grant funding	Culvert replacement designs and implementation	Miles of fish habitat reconnected	Start: Fall 2002 End: Ongoing
Riparian vegetation / pasture management	**High**	Watershed-wide, focusing on private lands	Watershed Council / East Lane SWCD	Examples of successful approaches; grant funding for implementation	Implemented projects (riparian fencing, etc.)	Number of projects implemented	Start: Fall 2002 End: Ongoing
Invasive weed eradication	**Medium**	Watershed-wide	Watershed Council / Federal Agencies / ODA	Examples of successful approaches; grant funding for implementation	Implemented projects	Number of projects implemented	Start: Fall 2002 End: Ongoing
English Ivy and Scotch broom eradication on SUB well fields and city property	**High**	SUB well fields	SUB / City of Springfield / ODA	Volunteers	Implemented project	Area of weed eradication	Start: Winter 2002 End: Ongoing
Reconnect river side channels	**Medium**	MF Willamette River	Watershed Council	Identification of high priority sites; grant funding for implementation	Grant proposals; implemented projects	Number of side channel restoration projects implemented	Start: Fall 2002 End: Ongoing
Improve Lost Creek shade and large wood recruitment through riparian planting	**High**	Lower Lost Creek, and Elijah Bristow Park	Lane County Landwatch / Watershed Council	Identification of high priority sites; grant funding for implementation	Grant proposals; implemented projects	Number of acres planted with vegetation	Start: Ongoing End: Ongoing

Protection of key riparian / floodplain areas	**High**	Along the river and lower portions of tributaries	Watershed Council / MRT	Identification of high priority sites; grant funding for implementation	Grant proposals; implemented projects	Number of acres protected through voluntary actions (easements, etc.)	Start: Winter 2002 End: Ongoing
Restoration of key riparian / floodplain areas	**High**	Along the river and lower portions of tributaries	Watershed Council / SWCD	Identification of high priority sites; grant funding for implementation	Grant proposals; implemented projects	Number of acres restored through voluntary actions (easements, etc.)	Start: Winter 2002 End: Ongoing
Oak savanna restoration	**Medium**	Elijah Bristow Park	Lost Creek Group	Volunteer coordination	Implemented project	Number of acres restored	Start: Winter 2002 End: Ongoing

4) Monitor and Assess Key Watershed Resources

(Goals and Actions not in any order of importance)

Goal 4: Monitor and Assess Key Watershed Resources

Action	Priority	Emphasis Area	Lead Person / Organization	Resources Needed	Product(s)	Evaluation Criteria	Time Line
Implement Council's water quality monitoring program throughout MFW Basin	**High**	Watershed-wide	Watershed Council / SUB / USFS / BLM	Volunteers; grant funding for implementation; coordination with other monitoring efforts	Water quality data and evaluation	Water quality evaluation reports produced	Start: Ongoing End: Ongoing
Identify most important lands and habitat for protection with voluntary landowner cooperation	**Medium**	Lower MF Willamette Watershed and lower portions of other watersheds	McKenzie River Trust	GIS data; aerial photographs	Priority areas and habitats for action	Number of acres protected	Start: Fall 2002 End: Winter 2002/03
Survey watersheds for invasive weeds	**High**	Watershed-wide	Watershed Council / Oregon Dept. of Agriculture	Volunteers; grant funding for implementation	Identification of priority weed eradication areas	Number of acres surveyed	Start: Fall 2002 End: Winter 2002/03
Identify information gaps and inventory fish passage barriers	**High**	Watershed-wide	Watershed Council, Lane County Public Works, ODFW	Funding, volunteers	Identification of fish passage barriers	Number of fish passage barriers identified	Start: Winter 2003 End: Ongoing

5) Coordinate Activities with Government Agencies and Other Organizations

(Goals and Actions not in any order of importance)

Goal 5: Coordinate Activities with Government Agencies and Other Organizations

Action	Priority	Emphasis Area	Lead Person / Organization	Resources Needed	Product(s)	Evaluation Criteria	Time Line
Coordinate floodplain restoration study outreach with US Army Corps of Engineers and other project participants	**High**	Watershed-wide	Watershed Council / East Lane SWCD/Coast Fork Watershed Council	Grant funding	Community outreach and education program	Number of landowners and residents reached	Start: Fall 2002 End: Ongoing
Coordinate comprehensive water quality monitoring program with landowners, SUB, USFS, and BLM	**High**	Watershed-wide, focusing on private lands	Watershed Council	Examples of successful approaches; grant funding for implementation; volunteers	Water quality monitoring data and reports	Successfully archived water quality monitoring data; number of water quality monitoring reports; actions (e.g., riparian plantings) based on monitoring conclusions	Start: Fall 2002 End: Ongoing
Coordinate assessment and actions to address fish passage barriers with ODFW, Lane County, and landowners	**Medium**	Watershed-wide	Watershed Council / Federal Agencies / Lane County/	Fish passage inventory data; grant funding for implementation	Culvert evaluations; grant proposals; replacement designs; and implementation	Number of barriers assessed; number of fish passage projects implemented; miles of habitat reconnected	Start: Fall 2002 End: Ongoing
Coordinate weed assessment and eradication with ODA, other agencies, and landowners.	**High**	SUB well fields	SUB / City of Springfield / ODA	Volunteers	Implemented project	Area of weed eradication	Start: Winter 2002 End: Ongoing

6) Track Actions and Report Progress to the Council, Landowners, and other Interests

(Goals and Actions not in any order of importance)

Goal 6: Track actions and report progress to the Council, landowners, and other Interests

Action	Priority	Emphasis Area	Lead Person / Organization	Resources Needed	Product(s)	Evaluation Criteria	Time Line
Report Action Plan implementation and monitoring results to watershed residents, Council, and local officials	**High**	Watershed-wide	Watershed Council	Staff resources for monitoring and reporting	Reports and public outreach documents	1) Yearly progress reports	Start: Ongoing End: Ongoing

Example: Reporting on riparian fencing project: Number of volunteers involved; linear feet planted; number of trees/shrubs planted; survival of plantings at years 1, 2, and 5; lessons learned in through project implementation and monitoring.

Appendices

Appendix A: Definitions and Acronyms

Definitions

Action plan area	The Action Plan Area encompasses 108,026 acres and is divided into three watersheds: The Lower Middle Fork Willamette Watershed; Little Fall Creek Watershed; and Lost Creek Watershed.
Adaptive management	Changing management techniques in the light of knowledge gained during monitoring or assessment.
Anadromous	Species that reproduce in freshwater and spend part of adult life in the ocean.
Aquifer	Rock formation or subsurface layer in which water collects.
Base flow	The portion of streamflow contributed to by groundwater.
Diversion	Removal of water from its natural channel for use in a different location.
Ecosystem	A community of organisms and the environment with which they interact.
Fallow	Fields left bare and unplanted during certain seasons.
Floodplain	The land adjacent to a river or stream that is periodically flooded by high water.
Invasive species	A species introduced into an environment from elsewhere. Also called exotic species.
Macroinvertebrates	Aquatic organisms that are large enough to see without the aid of magnification.
Native	A species that evolved in the particular environment or area that it currently resides in.
Photo point	A location at which photographs are taken to document change over time.

Riparian	Referring to the riverside area next to the stream channel.
Riparian vegetation	Plants that grow alongside a stream.
Riprap	Large angular rock overlaying the banks along rivers and streams designed to prevent erosion and channel migration.
Salmonid	Fish of the Salmonidae family, which includes salmon, trout, chars, whitefish, ciscoes, and grayling.
Stream reach	A stretch of a stream between two points.
Sub-basin	A subdivision of a large stream basin such as the Columbia. The Willamette River is a sub-basin of the Columbia River system.
Tributary	A stream or river that flows into a larger stream or river.
Water right	Legal right to use water at a defined point of diversion, time, and place of use.
Watershed	An area confined by ridgelines that drains a given stream or river. All land is part of one watershed or another.

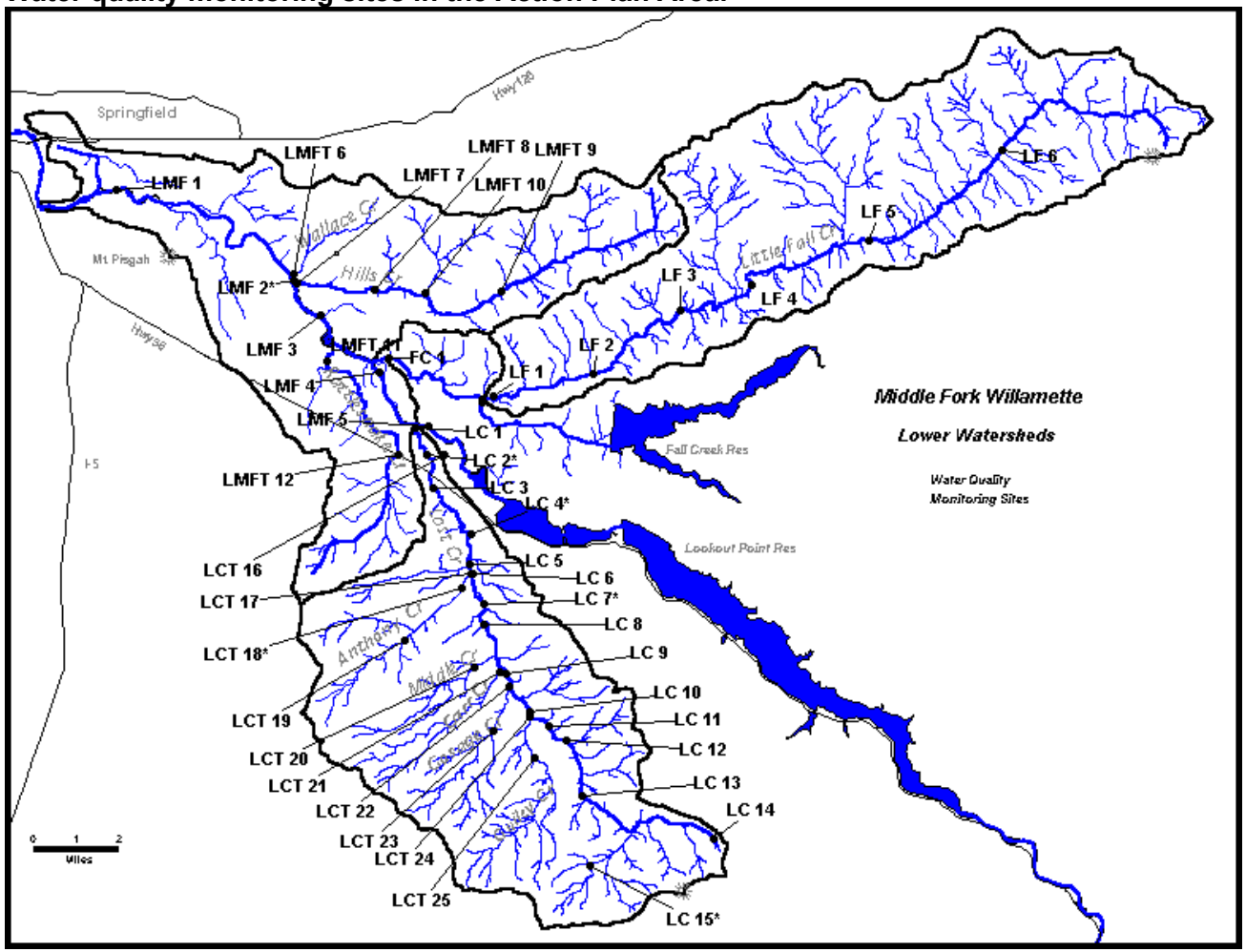
Acronyms

BLM	Bureau of Land Management
CWQMT	Citizen Water Quality Monitoring Team
DEQ	Department of Environmental Quality
GIS	Geographic Information System
LWD	Large Woody Debris

MFWWC	Middle Fork Willamette Watershed Council
MRT	McKenzie River Trust
n/a	not applicable
NRCS	Natural Resources Conservation Service
ODA	Oregon Department of Agriculture
ODFW	Oregon Department of Fish and Wildlife
OSU	Oregon State University
SUB	Springfield Utility Board
SWCD	Soil and Water Conservation District
USFS	United States Forest Service
UO	University of Oregon

Appendix B: Water Quality Monitoring Sites

Water quality monitoring sites in the Action Plan Area.



Water quality monitoring sites in the Lower Middle Fork Willamette Watershed.

Site #	Site Location	River Mile from mainstem mouth	Parameters	Data Years	Agency	Criteria Exceedance
	Mainstem sites in upstream order					
LMF1	MFW near millrace inlet, approx rm 2.0	1.89	temp, turb, bact, ph, DO, cond,	2000	SUB	DO, pH,
LMF2	MFW at Jasper Bridge	7.85	monthly ambient many parameters	many	DEQ	temp
LMF3	MFW at Jasper Park elev. 535'	9.01	continuous summer temperature	2001	MFWWC	temp
LMF4	MFW above Fall Cr. Elev 560'	11.15	continuous summer temperature	2001	MFWWC	temp
LMF5	MFW above Lost Cr. Near boat ramp elev. 595'	13.15	continuous summer temperature	2001	MFWWC	temp
	Tributary sites in upstream order					
LMFT6	Wallace Cr. Mouth elev. 535'	7.73	continuous summer temperature	2001	MFWWC	no
LMFT7	Hills Cr. At Jasper road bridge elev. 540'	7.98	continuous summer temperature	2001	MFWWC	temp
LMFT8	Hills Cr. At river mile 2 bridge elev 680'		continuous summer temperature	2001	MFWWC	temp
LMFT9	Hills Cr at 3rd bridge BLM boundary elev 1030'		continuous summer temperature	2000, 2001	BLM	temp
LMFT10	Cedar Creek, trib to Hills Cr, mouth elev 765'		continuous summer temperature	2001	MFWWC	temp
LMFT11	Rattlesnake Creek at 1st bridge above mouth elev 550'	9.77	continuous summer temperature	2001	MFWWC	temp
LMFT12	Rattlesnake Creek at Hwy 58		continuous summer temperature	2001	MFWWC	temp
FC1	Fall Creek mouth elev. 570'	11.1	continuous summer temperature	2001	MFWWC	temp
FC2	Fall Creek above Little Fall elev. 610'	11.2	continuous summer temperature	2001	MFWWC	temp

MFWWC = Middle Fork Willamette Watershed Council; MFW = Middle Fork Willamette River

Water quality monitoring sites in the Lost Creek Watershed.

Site #	Site Location	River Mile from mainstem mouth	Parameters	Data Years	Agency	Criteria Exceedance
	Mainstem sites in upstream order					
LC1	Lost Creek mouth, elevation 590'	12.88	continuous summer temperature	1998-2001	Lost Cr. group and MFWWC	temp
LC2	Lost Cr. At Elijah Bristow S.P. bridge	0.79	temp (grab), pH, DO, turb.	1999 - 2001	Lost Creek group	
LC3	Lost Cr. At 38404 Dexter Rd. El. 625'	1.75	continuous temp, pH, DO, turb.	1999-2000	Lost Creek group	temp
LC4	Lost Cr. At Barbre/Rogers road corner	3.35	temp (grab), pH, DO, turb.	1999 - 2001	Lost Creek group	
LC5	Lost Cr. Below Wagner Cr. Elev. 700'	4.16	continuous summer temperature	1999 - 2000	Lost Creek group	temp
LC6	Lost Cr. Above Anthony Cr. Elev. 720'	4.4	continuous summer temperature	2001	MFWWC	temp
LC7	Lost Cr. At 81894 LC rd.	5.2	temp (grab), pH, DO, turb.	1999 - 2001	Lost Creek group	
LC8	Lost Cr. At Lost Creek road bridge, elev. 750'	5.78	continuous summer temperature	1999-2000	Lost Creek group	temp
LC9	Lost Cr. At 80933 LC rd, above Carr Cr. Elev. 820'	7.31	continuous temp, pH, DO, turb.	2000-2001	Lost Creek group	temp
LC10	Lost Cr. At 80655 LC rd, below Guiley Cr. Elev. 860'	8.42	continuous temp, pH, DO, turb.	1999-2001	Lost Creek group	temp
LC11	Lost Cr. Above Guiley Cr. Elev. 935'	9.09	continuous summer temperature	2000-2001	Lost Creek group	none
LC12	Lost Cr. Below Eagle Cr. At quarry elev. 1000'	9.7	continuous summer temperature	1998-2001	BLM	temp '98 only
LC13	Lost Cr. At SE bend in road at rock outcrop elev. 1220'	11.1	continuous temp, pH, DO, turb.	1999-2001	Lost Creek group	none
LC14	Lost Cr. Headwaters road xing NE 1/4 sec. 29 elev 2770'	14.77	continuous summer temperature	1999	Lost Creek group	none
LC15	Lost Cr. Headwaters road xing SE 1/4 sec. 26 easternmost stream in hairpin turn	12.57	temp (grab), pH, DO, turb.	1999-2001	Lost Creek group	none
	Lost Cr. tributary and other sites in upstream order					
LCT16	Elijah Bristow State Park Pond elev. 610'	1.04	continuous summer temperature	1999, 2000	Lost Creek group	warm - chubpond
LCT17	Anthony Creek mouth elevation 715'	4.38	continuous summer temperature	2001	MFWWC	temp

Site #	Site Location	River Mile from mainstem mouth	Parameters	Data Years	Agency	Criteria Exceedance
LCT18	Anthony Cr. Near bridge at rm. 0.4 Lost Valley Ed. Center		temp (grab), pH, DO, turb.	1999-2001	Lost Creek group	
LCT19	Anthony Cr. Approx. rm.2.5 at BLM boundary sec 31 elev 1020'		continuous summer temperature	1998-2001	BLM	temp
LCT20	Middle Cr. At bridge rm.0.5	6.71	continuous summer temperature	1998-2001	BLM	temp '98 only
LCT21	Carr Cr. At Lost Creek road bridge elev. 800'	7.01	continuous summer temperature	2001	MFWWC	none
LCT22	Gosage Cr. At Lost Creek road bridge elev. 820'	7.68	continuous summer temperature	2001	MFWWC	temp
LCT23	Gosage Cr. At east/west fork confluence rm 1.2 elev. 1020'		continuous summer temperature	1998-2001	BLM	none
LCT24	Guiley Cr. Mouth elevation 900'	8.56	continuous summer temperature	2001	MFWWC	none
LCT25	Guiley Cr. Rm 1.0 sec. 15 BLM boundary		continuous summer temperature	1998-2001	BLM	none

Data for the assessment was obtained from a total of 25 sites in the Lost Creek watershed.

Water quality monitoring sites in the Little Fall Creek Watershed.

Site #	Site Location	River Mile From mainstem mouth	Parameters	Data Years	Agency Source	Criteria Exceedance
	Mainstem sites in upstream order					
LF1	Little Fall Creek mouth elev. 623'	0.2	continuous summer temperature	2001	MFWWC	temp
LF2	Little Fall Creek rm 3 elev. 700'	3.1	continuous summer temperature	2001	MFWWC	temp
LF3	Little Fall Creek rm 5.5 past 1st br. Elev. 850'	6.1	continuous summer temperature	2000, 2001	BLM	temp
LF4	Little Fall creek rm 8.2 above Norton Cr. Elev 950'	8.3	continuous summer temperature	2001	BLM	temp
LF5	Little Fall Cr. At Fish Ladder elev. 1200'	12.2	continuous summer temperature	2001	MFWWC	none
LF6	Little Fall Cr. At upper FS boundary elev. 1480'	16.56	continuous summer temperature	2001	MFWWC	none

Appendix C: Community Resources

CITY

City of Lowell
City Hall
107 East 3rd
Lowell, OR 97452
541-937-2157

City of Springfield, City Council
C/o Manager's Office
225 5th Street
Springfield, OR 97477
541-726-3700

Springfield Utility Board
P.O. Box 300
Springfield, OR 97477
541-726-6582
http://www.subutil.com

City of Oakridge
City Hall
48318 East 1st St.
Oakridge, OR 97463
541-7822258

City of Westfir
City Hall
Westfir, OR 97492
541-782-3733

STATE ELECTED OFFICIALS

State Senator- 6th District
Bill Morrisette
900 Court St. NE H-374
Salem, OR 97301
(503) 986-1442
morrisette.rep@state.or.us
http://www.leg.state.or.us/morrisette/

State Representative – 7th District
Jeff Kruse
900 Court St. NE H-374
Salem, OR 97301
(503) 986-1442

State Representative – 12th District
Elizabeth Terry Beyer
900 Court St. NE H-374
Salem, OR 97301
(503) 986-1442

State Senator- District 22 4th District
Tony Corcoran
900 Court St. NE S-305
Salem, OR 97301
(503) 986-1722
corcoran.sen@state.or.us
http://www.leg.state.or.us/corcoran/

COUNTY GOVERNMENT

Lane County Elections/Voter Registration
135 E. 6th St. Eugene, OR 97401
(541) 682-4234

Lane Council of Governments
99 East Broadway, Suite 400
Eugene, Oregon 97401-3111
(541) 682-4283
http://www.lcog.org

Lane County Public Works
3040 Delta Hwy N.
Eugene, OR 97408-1696
(541) 682-6900
http://www.co.lane.or.us/pw/

Lane County Emergency Services
Courthouse, 125 East 8th Avenue
Eugene, OR 97401
(541) 682-4434

FEDERAL GOVERNMENT

Bureau of Land Management (Eugene District Office)
2890 Chad Drive
Eugene, OR 97440
(541) 683-6600

Environmental Protection Agency (Region 10 Office)
1200 Sixth Ave.
Seattle, WA 98101-1128
1-800-424-4372

LOCAL ORGANIZATIONS

MF Willamette Watershed Council
Amy Chinitz, Coordinator
PO Box 27, Lowell, OR 97452
(541) 937-9800
mfwwc@efn.org

McKenzie River Trust
532 Olive St.
Eugene, OR 97401
(541) 345-2799
http://mckenzieriver.org

Weyerhaeuser (Springfield Operations)
785 N. 42nd St.
Springfield, OR 97478
(541) 746-2511

East Lane Soil and Water Conservation District
1600 Valley River Dr.
Eugene, OR 97401
(541) 465-6436
http://www.netcnct.net/community/oacd

STATE GOVERNMENT

Department of Environmental Quality (Eugene office)
1102 Lincoln Suite 210
Eugene, OR 97401
(541) 686-7888

Farm Service Agency (Lane County Office)
1600 Valley River Dr. Suite 230
Eugene, OR
(541) 465-6443

Forest Service, Oakridge Ranger District
46375 Highway 58
Westfir, Oregon 97492
541-782-5329

National Marine Fisheries Service (Northwest Regional Office)
7600 Sand Point Way NE
Seattle, WA 98115-0070
(206) 526-6150
http://www.nwr.noaa.gov

Natural Resources Conservation Service (Eugene Field Office)
1600 Valley River Dr. Suite 230
Eugene, OR
(541) 465-6443

United States Forest Service (Middle Fork Ranger District)
46375 Highway 58
Westfir, OR 97492
(541) 782 - 2291

United States Geological Service (Oregon District Office)
10615 SE Cherry Blossom Drive
Portland, Oregon, 97216
(503) 251-3200
http://or.water.usgs.gov

Oregon Department of Fish and Wildlife (Springfield field office)
3150 E. Main St.
Springfield, OR 97478
(541) 726-3515

Oregon Department of Forestry (East Lane District)
3150 Main St.
Springfield, OR 97478
(541) 726-3588

Oregon Division of State Lands
775 Summer St., NE, Suite 100
Salem, OR 97301-1279
(503) 378-3805

Oregon Economic and Community Development Department
775 Summer St., NE, Suite 200
Salem, OR 97301-1280
(503) 986-0123

Oregon State University Extension Service (Lane Extension)
950 W. 13th Ave.
Eugene, OR 97402
(541) 682-4243

Oregon Watershed Enhancement Board
255 Capitol St., NE, 3rd Floor
Salem, OR 97310-0203
(503) 378-3589
http://www.oweb.state.or.us

Daily flow data for Middle Fork Willamette Jasper gauging station, U.S. Army Corps of Engineers http:://www.nwa-wc.usace.army.mil/cgi-bin/GenPlot?BasinName=WILLAMETTE&PlotName=HJASO