

A number of studies have shown that the conversion of former railroad routes to recreational trails increases visitation and produces visitor-serving economic activity. Trailside residents note that the Springwater Trail is already attracting hikers and bicyclists to the Johnson Creek watershed in greater numbers than formerly. As Johnson Creek itself is improved, the amenity value of the Springwater Trail will increase, attracting still more new users. There is also some evidence that proximity to natural areas and recreational resources increases property values. However, because it takes time for community character to change, and for the change to be recognized by homebuyers, it may be many years before significant appreciation in property prices occurs.

The RMP actions designed to improve water quality, fish and wildlife habitat, and recreational opportunities will not only contribute to long-term community improvement but will also produce near-term non-monetary benefits. Measurable improvements in fish and wildlife habitat and passive recreational opportunities will be evident within five years of implementation, although the full benefits of stream improvements will not be realized for 30 to 50 years. Residents and visitors alike will enjoy the benefit of quiet streamside groves and the pleasure of watching fish, birds and animals in a natural setting.

## ■ COSTS

In order to obtain the benefits described above investments must be made. Most of the direct investment cost will be borne by the public sector. The estimated public sector cost of implementing the RMP is summarized by element in Table 31. The cost estimates should be regarded as planning level estimates. They are based on conceptual, rather than detailed, plans and programs.

**TABLE 31**  
Estimated Public Sector Costs of RMP

PP-1	Initial Costs <sup>a</sup>		Annual Costs
	Capital	Program	
Pollution Prevention <sup>b</sup>	\$300,000	\$273,000	\$15,000
Flood Reduction	14,000,000	165,000	158,000
Fish and Wildlife Habitat Enhancement	650,000	95,000	—
Watershed Stewardship	—	90,000	100,000
<b>TOTAL</b>	<b>\$14,950,000</b>	<b>\$623,000</b>	<b>\$273,000</b>

- Notes
- a Initial costs are non-recurring costs, that is they are costs which are only incurred once. Initial costs are sub-divided into capital costs and program costs. An example of an initial capital cost is the construction cost of a flood detention basin. An example of an initial program cost is the cost of drafting and adopting a non-point source pollution control ordinance.
  - b An estimated \$800,000 per annum is already being expended by the cities of Gresham and Portland and Clackamas County to control pollution from urban stormwater in the Johnson Creek watershed.

Two kinds of costs are shown in Table 31: initial costs and continuing costs. Initial costs are non-recurring costs; that is they are costs which are only incurred once. Initial costs are sub-divided into capital costs and program costs. An example of an initial capital cost is the construction cost of a flood detention basin. An example of an initial program cost is the cost of drafting and adopting a non-point source pollution control ordinance. Continuing costs are costs that recur periodically, for example, the cost of operating the watershed management organization and the cost of maintaining the capacity of the creek channel.

The initial public sector cost of implementing the RMP will be \$15.6 million. All but about \$650,000 will be construction cost. The remainder will be the cost to begin a variety of environmental improvement programs including forming the WMO. Continuing costs of about \$300,000 will be incurred to implement the RMP. Half of the cost will be to operate the WMO, while the remainder will be used to maintain facilities.

Private sector costs are more difficult to estimate. Private parties may make direct investments in improving the watershed's environment, primarily by revegetating privately-owned creekside lands with native trees and shrubs. Because most of the private investments will be entirely voluntary it is impossible to estimate how extensive they will be. If all stream side private property owners on the mainstem of Johnson Creek participated in the riparian revegetation project, then the total cost for revegetation is estimated to be \$1,400,000.

In a few cases, some of the costs of the RMP will be borne indirectly by private parties. An example might be the loss of value of a privately-owned lot in the flood plain that becomes unbuildable or less buildable as a result of environmental regulations in the RMP.

## DISTRIBUTION OF COSTS AND BENEFITS AMONG JURISDICTIONS

### ■ BENEFITS

As noted above, the primary readily-quantifiable monetary benefits of the RMP stem from flood reduction. Because some jurisdictions are more vulnerable to flooding by Johnson Creek than others, the benefits of flood reduction are not shared equally. Johnson Creek runs through five jurisdictions all of which would benefit from flood reduction to some degree. The sixth jurisdiction, the city of Happy Valley, lies some distance away from Johnson Creek. It would receive no benefit from the measures in the RMP that are designed to reduce flooding of existing structures.

Table 16 shows the estimated damage costs associated with various flood frequencies. An important point to note in reviewing the estimates is that most of damage occurs in the Lents area between Interstate 205 and S.E. 128th Avenue. If the total damage caused in a 25-year storm is valued at \$10.8 million, then \$10.22 million, or more than 90%, would occur in this reach. The area lies entirely within the City of Portland.

If the flood reduction measures contained in the RMP prevented the 25-year flood from occurring then the damage costs shown in Table 16 would be avoided. The primary beneficiary of flood protection would be the city of Portland. The cities of Milwaukie and Gresham and Multnomah and Clackamas County would all obtain minor benefits from the flood reduction measures.

The benefits accrued by the six jurisdictions as a result of water quality and fish and wildlife habitat improvements and increased recreational opportunities are difficult to estimate monetarily. All jurisdictions, through which the creek flows, would benefit from the improvements collectively. Improvements made to reduce sediment discharge from the upper watershed would benefit all downstream communities because water quality would be enhanced and less silt would be deposited in the channel, reducing its capacity to convey floodwater and its suitability as fish habitat. Fish habitat improvements in the lower reaches may eventually increase the numbers of salmonids that return to the upper watershed, benefiting upstream communities. A reasonable basis for allocation of these benefits would be to assume that they are proportional to the lengths of Johnson Creek mainstem within each jurisdiction. A more complex approach to distribution of non-flood control benefits could be attempted, but it is doubtful that it would be any fairer.

## ■ COSTS

Various formulae could be used to share the costs between jurisdictions. Several possibilities are discussed below. However, the formula actually used will likely result from negotiation between the jurisdictions.

A common basis for sharing the cost of a project is in proportion to benefits received. This is complicated in the case of the RMP because the plan has multiple benefits some of which cannot be readily quantified. By far the most expensive portion of the RMP is the flood reduction facilities. Costs of the facilities could be shared by the jurisdictions in proportion to the benefits (avoided damages) shown in Table 16. On this basis almost all the cost would be borne by Portland as the bulk of the avoided damage is within that city's Lents-Powellhurst neighborhood.

As noted above a reasonable basis for dividing the benefits of water quality and fish and wildlife habitat improvements would be proportional to stream miles in each jurisdiction. Costs could be shared accordingly. In fact, this approach to cost sharing is probably not practical. The costs of the RMP, other than flood reduction costs, are quite modest. It would be most practical for each jurisdiction to simply pay for the improvements within its own boundaries. This would avoid the need to negotiate a cost-sharing agreement and, because of the modest costs involved, would not work a hardship on any party.

It could be argued that the division of costs described above is unfair to the downstream communities of Portland and Milwaukie. The rapidly growing city of Gresham relies on Johnson Creek to drain floodwater away. Although Gresham has wisely avoided development in the 100-year flood plain, and thus the potential for damage within its own

boundaries, its use of Johnson Creek has contributed to flooding in downstream communities. Development in Milwaukie and Portland occurred many years ago when building in flood plains was largely unregulated. While the properties in the floodplain were always vulnerable to flooding their vulnerability has been increased by development of the upper watershed. As homes, businesses, and parking lots have replaced farm land in the Gresham area, the volume and speed of runoff entering Johnson Creek have almost certainly increased. Based on this premise it could be argued that Gresham should share in the cost of protecting downstream properties. Determining an appropriate share is problematic, because the hydrologic data available is insufficient to allow accurate assessment of Gresham's contribution to downstream flooding. The hydrologic modeling conducted in support of the RMP suggests that downstream peak stream flow is not particularly sensitive to changes in land use in the upper watershed.

An alternative approach would be to share the costs of all facilities based on land area or population. It could be argued that all who live in the watershed, or all lands in the watershed, contribute to the problem and, thus, should pay for the solution.

## FUNDING

The RMP calls for actions by cities and counties, other government agencies, the yet-to-be created watershed management organization, and private individuals and corporations. Potential funding sources for each of these parties are described separately below.

### ■ CITIES AND COUNTIES

Cities and counties are responsible for a number of actions in the RMP. Some of the actions involve capital costs. Construction of new flood detention reservoirs and stormwater treatment facilities are examples of actions involving capital expenditures. Others involve administrative costs that only occur once; an example is the cost of revising an ordinance or regulation. Still others involve recurring annual costs. Channel maintenance is an example of an activity that will have recurring annual costs. Funding each of these actions is discussed below.

#### *Initial Capital Costs*

Three actions in the RMP involve significant capital costs for cities and counties. They are:

- construction of flood reduction facilities
- construction of stormwater treatment devices
- revegetation of the riparian corridor on public lands

#### *Flood Reduction Facilities*

By far the largest capital cost will be for flood reduction facilities. They will cost approximately \$14 million. Because the flood reduction facilities would benefit all

jurisdictions within the watershed the cost should be divided among the jurisdictions in accordance with a formula that takes account of benefits received and responsibility for the present flooding problem (see earlier discussion of distribution of benefits and costs among jurisdictions).

Each jurisdiction will obtain its share of capital costs in the manner it chooses but stormwater fees would be a logical choice. Most jurisdictions in the watershed charge property owners a fee for stormwater management. They would be a logical choice as a funding source because flood reduction is a major component of stormwater management. Furthermore equity suggests that, because everyone living in the basin contributes to the problem, they should also pay for the solution.

Alternatively, the cities and counties in the watershed could try to obtain federal funds to support construction of flood control facilities. There are a number of federal programs for this purpose. They are listed in Technical Memorandum No. 13. One of the largest programs is administered by the U.S. Army Corps of Engineers. Under this program the Corps of Engineers would be required to conduct a feasibility study for Johnson Creek. If the feasibility study demonstrated that the project was cost-effective, in accordance with federal criteria, then it would be designed and built by the Corps. The cities and counties in the watershed would have to contribute 50 percent of the cost of the feasibility studies and a negotiated proportion of the design and construction costs.

### *Stormwater Treatment Devices*

The RMP calls for the construction of fifteen small stormwater treatment projects. Capital costs will most likely be borne by the jurisdictions within which the improvements lie. These projects could also be funded by stormwater management fees. Stormwater management regulations explicitly include provisions for stormwater treatment. Although a number of federal programs provide funds for water pollution control projects it is unlikely that the proposed stormwater treatment devices would be eligible for support.

### *Revegetation*

The RMP also calls for revegetation of the riparian corridor on public lands, much of which lie within parks. Only two park providers, the cities of Gresham and Portland, own lands on the creek. The estimated cost of revegetation is approximately \$400,000, although the cost will vary widely from location to location. In some cases where the riparian corridor is intact, albeit degraded, only minor planting and clearing of non-natives may be needed. In others, complete revegetation will be necessary.

The most likely source of funds for restoration of the riparian corridor are the parks and recreation budgets of Portland and Gresham. Another source could be city water quality management budgets because revegetation of the riparian corridor would reduce water temperatures and otherwise benefit water quality. Because planting plans will have to be developed to ensure that revegetation is compatible with other park uses, the costs are likely to be spread over several years. As a result, the annual impacts on each city's budget

will not be large and the expenditures can be planned well in advance. The riparian revegetation projects may be eligible for funding under a number of federal and state watershed enhancement programs. In Oregon, both the Governor's Watershed Enhancement Board and the Department of Water Resources' Watershed Health Program provide funding for projects of this type. Gresham has already applied for a grant from the Governor's Watershed Enhancement Board to restore the riparian corridor in Gresham Main Park. Some private foundations also support stream revegetation projects.

### *Initial Program Costs*

Initial program costs are start-up administrative costs. A number of actions in the RMP will require a one-time commitment of public agency staff time to draft and adopt new, or modified, regulations. An example is the redrafting and adoption of new regulations for stormwater management at new developments.

In some cases, the additional work required will fall within the normal duties of existing government staff members and will consequently cost very little. In other cases a substantial commitment of staff time will be needed, although the estimated cost of the extra work is modest compared to the capital costs. Sources of funds for initial program costs will include stormwater management fees and, to the extent that the required work complements ongoing city activities, general funds.

### *Continuing Costs*

The primary continuing cost borne by cities and counties will be for maintenance of the creek channel, flood reduction and pollution prevention facilities. The most likely source of funds for these activities will be city and county public works departments' maintenance budgets. Another city and county continuing cost will be financial support of the watershed management organization. Funding of the WMO is discussed in detail below.

## ■ OTHER GOVERNMENT AGENCIES

The RMP calls for a few actions by government agencies other than cities and counties. The actions involve the development of new plans and enforcement of new regulations. Costs will be borne by the agencies responsible for the actions.

Action PP-2-5 calls for Oregon Department of Environmental Quality to ensure that industrial stormwater generators in the watershed apply for and obtain discharge permits under the NPDES system. Although this action is already required by law it has not yet been fully implemented. It was assumed that one person-year of effort would be needed to take effective action and that this amount should be included in DEQ's budget. Action PP-3-1 calls for the preparation of stormwater management plans for rural areas at an estimated cost of \$100,000. The agencies responsible for preparing the plans would be the soil and water conservation districts. Potential funding sources include the Oregon Department of Agriculture and the U.S. Department of Agriculture, Natural Resources

Conservation Service. Natural Resources Conservation Service programs that might support environmental planning in agricultural areas are listed in Technical Memorandum No. 13.

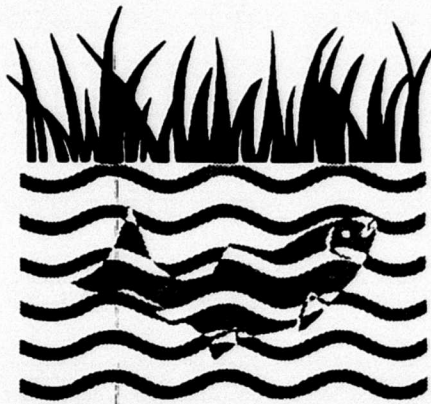
## ■ WATERSHED MANAGEMENT ORGANIZATION

Many actions in the RMP will be undertaken by the newly-created watershed management organization (WMO). Obtaining a stable funding source for the WMO will be critical to the success of the RMP. With a budget of \$100,000 the WMO would have a permanent staff, an office and a library focused on watershed management and environmental resources.

Initially the WMO will be funded from a variety of sources which might include jurisdictions in the watershed. In general, participation of the jurisdictions in funding the WMO will not impose new costs on the cities and counties because they will be offset by benefits derived from WMO activities. WMO activities will include citizen education designed to curb practices that cause water pollution, volunteer construction of pollution control facilities and creek enhancement projects, prompt reporting of instances of pollution in the watershed and monitoring to determine the cause of water quality problems. Action taken now by the WMO to reduce pollutant emissions could avoid the need for action by cities and counties later, when water quality regulations for Johnson Creek become more stringent.

Over time it is expected that operating funds for the WMO will be augmented by funds from private foundations and from state and federal sources including Oregon's watershed enhancement programs.

There are a number of private foundations that offer grants for environmental improvement projects. A list of foundations supporting activities most closely linked to the proposed WMO charter can be found in Technical Memorandum No. 13. The WMO will establish an adjunct non-profit corporation or enter into an agreement with an existing non-profit corporation to facilitate receipt of funds from foundations and other private parties.



## CHAPTER 6

### CONTRIBUTORS

Scores of individuals contributed to the RMP in a variety of ways. The Johnson Creek Corridor Committee, named in the frontispiece, directed preparation of the plan. Primary funding and contract management was provided by the City of Portland, Bureau of Environmental Services. The City's project manager was Eric Machorro. Earlier, Jim Soli and Jean Ochsner served as project managers for the City.

The prime contractor for plan preparation was Woodward-Clyde Consultants. John A. Davis served as the Woodward-Clyde's project manager and was the principal author of the report. Craig Harper served as assistant project manager. The following individuals were responsible for preparing portions of the plan and otherwise supporting the planning process.

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In preparing the plan the technical staff were assisted by four task groups. The task groups consisted of members of the Johnson Creek Corridor Committee and others interested in particular aspects of the planning process. The membership of the task groups was as follows.

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APPENDIX

**Industries in the Johnson Creek Watershed  
Which Have Obtained a Permit for Their Stormwater Discharges**

Facility	Legal Name	P-Type	Location	City	Zip
88776/A	CGC, Inc	GEN 12C	E of Regner Rd, W of Hogan Rd, S	Gresham	97030
107829/A	B I Gentry Construction Company, Inc	GEN 12C	Between 30th & 31st Ave, E of 190th	Gresham	97080
107834/A	Brown, Lester & Patricia	GEN 12C	Cedar Lake Subdivision	Gresham	97080
107836/A	Cascade Communities, Inc	GEN 12C	4005 N E Division St	Gresham	97030
107838/A	Cascade Development Company	GEN 12C	1180 S E Hogan Rd	Gresham	97030
108049/A	Hemstreet, Greg A, Rockwell, Mark P	GEN 12C	2650 S E Palmbad Rd at Hillyard's	Gresham	97030
107868/A	Hunters Highland Inc	GEN 12C	182nd Ave	Gresham	97030
107867/A	Winmar Pacific, Inc	GEN 12C	E of 185th Ave, S of Mar	Gresham	97030
108003/A	Van Loo, Mike	GEN 12C	S E Rex Street and 109th	Portland	97222
106772/A	Oregon Department of Transportation	GEN 12CA	Milwaukie	97222	97222
78990/A	Scenic Fruit Company	GEN 12F	7510 S E Altman Rd	Gresham	97080
100484/A	Associated Chemists, Inc	GEN 12H	4401 S E Johnson Creek Blvd	Portland	97222
106844/A	Miles Fiberglass & Plastics, Inc	GEN 12H	8855 S E Otty Road	Portland	97266
100481/A	Precision Castparts Corp	GEN 12H	4600 S E Harney Drive	Portland	97206
107733/A	Roper Industries, Inc - dba	GEN 12L	2323 S E Harvester Drive	Milwaukie	97222
106157/A	Precision Castparts Corp	GEN 12L	6465 S E Crosswhite Drive	Portland	97206
106956/A	Precision Castparts Corp	GEN 12L	9109 S E 64th	Portland	97206
101366/A	Brod & McClung-Pace Co	GEN 12L	9800 S E McBrod Avenue	Portland	97222
100551/C	East Side Plating, Inc	GEN 12L	8400 S E 26th Place	Portland	97202
107563/A	Union Oil Company of California	GEN 12T	2176 S E First Street	Gresham	97030



**Wildlife Habitat Protection and Improvement Site Specific Recommendations  
Johnson Creek Watershed**

Site by River Mile	General Habitat Description	Limiting Factors and Habitat Value	Recommendations
<b>MAINSTEM - JOHNSON CREEK</b>			
Mainstem 0 0 - 27 (mouth to 17th)	UFO-99-R disturbed, primarily an alder forest, Himalayan blackberry dominates shrub layer connectivity level 2	Low - narrow strip of habitat lacks species and structural diversity and dead wood habitat	Enlarge riparian zone, where possible revegetate with native trees, shrubs and forbs, remove Himalayan blackberry
27- 35 (begins at 17th St crossing)	UFC-99-R disturbed, dominated by alder (sapling and larger trees) in clumps, no well developed shrub layer, exotic grasses, connectivity level 2	Low - narrow strip of habitat lacks species and structural diversity and dead wood habitat	Widen riparian zone, where possible, revegetate with native trees, shrubs, and forbs, remove Himalayan blackberry
35- 45	UM highly disturbed, riparian vegetation lacking connectivity level 2	Low - narrow strip of habitat lacks species and structural diversity and dead wood habitat	Widen riparian zone, where possible, revegetate with native trees, shrubs and forbs remove Himalayan blackberry
45- 73 (ends at Milport)	UFO-99-R disturbed, primarily alder saplings, no shrub layer, connectivity level 2	Low - narrow strip of habitat lacks species and structural diversity and dead wood habitat	Widen riparian zone, where possible, revegetate with native trees, shrubs, and forbs, remove Himalayan blackberry Remove some instream vegetation to accommodate flood channel capacity goal, re-terrace and soil bioengineer new bank, plant natives as above and allow to succeed (see Profile #1)
60- 73	UM disturbed, alder saplings in clumps, mostly grasses, connectivity level 2	Low - narrow strip of habitat lacks species and structural diversity and dead wood habitat	Widen riparian zone, where possible, revegetate with native trees, shrubs, and forbs, remove Himalayan blackberry
73- 96	UFC-99-R disturbed larger alder trees, no shrub layer, grass to creek edge in local spots connectivity level 2	Low - narrow strip of habitat, lacks species and structural diversity and dead wood habitat	Widen riparian zone where possible, revegetate with native trees shrubs, and forbs remove Himalayan blackberry
96-1 14 (ends at Ochoco Sl)	UFO-99-R disturbed young alder H blackberry, trash on stream & on bank connectivity level 2	Low - narrow strip of habitat, lacks species and structural diversity and dead wood habitat	Widen riparian zone, where possible, revegetate with native trees shrubs and forbs remove Himalayan blackberry
1 14-164 (Ochoco north to 99)	UFO-99-R disturbed alder forest primarily, H blackberry in understory, lawns, connectivity level 2	Low - narrow strip of habitat lacks species and structural diversity and dead wood habitat	Plus bank restoration needed at Sherrett
1 64-1 75 (in between McLoughlin and RR)	No riparian zone little or no vegetation except grasses and H blackberry, no connection to other habitats	Very low - no habitat Only weed grasses, no riparian cover	Restore riparian zone with native plants (see planting plan)
1 75-2 2	UFC-99-R disturbed east bank mostly alder west bank-grass and H blackberry connectivity level 2	Low - as 0 - 27	Restore riparian zone with native plants (see planting plan)

**Wildlife Habitat Protection and Improvement Site Specific Recommendations (Continued)**

Site by River Mile	General Habitat Description	Limiting Factors and Habitat Value	Recommendations
2 2-2 45 (south end of golf club at Berkeley St)	UFO-99-R mostly sapling alder with scattered larger alder and big-leaf maple, reed canary grass and H blackberry dominate openings, connectivity level 2	Low – good tree canopy but lacks species diversity, shrub layer and dead wood habitat	Add shrub layer and dead wood component, add shrub and forb layers of native plants, remove exotic invasive plants
2 45-2 6	UFC-99-R natural, fairly dense stand of larger alder and maple, connectivity level 2	Low to medium – some natives but needs more structural diversity	develop off channel ponds on north bank to provide additional aquatic habitat for wildlife and fish
2 6-6 8	UFO-99-R disturbed and natural alder is dominant tree, patches of scattered Douglas fir, H blackberry is dominant shrub in local areas (e.g., at south Luther Road bridge) canopy is clumped and scattered sapling alder with more extensive stands of H blackberry, connectivity level 2	Low – narrow riparian corridor, lacks structural diversity, subject to high disturbance from adjacent development, dead wood lacking	<ul style="list-style-type: none"> <li>• Widen riparian corridor and revegetate with native trees shrubs, and herbs</li> <li>• Remove Himalayan blackberry and replace</li> <li>• Identify possible connecting areas to upland habitats and revegetate</li> </ul>
Tideman Johnson Park			<ul style="list-style-type: none"> <li>• Place log barrier at west end of RR abutment to expand aquatic habitat into floodplain, place instream structures (logs) to meander stream channel</li> <li>• Revegetate where necessary</li> </ul>
RM 2 7 to 2 9			<ul style="list-style-type: none"> <li>• Add off channel aquatic habitat on west side of creek across from waterfall area</li> <li>• Replant as necessary with native shrubs and forbs</li> </ul>
Bell Station Area			<ul style="list-style-type: none"> <li>• Remove some instream vegetation to accommodate flood channel capacity goal, bioengineer new bank plant natives as above (Profile #5), and allow to succeed</li> </ul>
5 0 to 5 4	USS-99-R disturbed open field area north of creek vegetated mostly by Himalayan blackberry and reed canary grass	low poor cover, mostly unvegetated or has non-native plants	<ul style="list-style-type: none"> <li>• Develop off channel to provide additional aquatic habitat for wildlife and fish</li> <li>• Replant with native species</li> </ul>
6 8-7 4 (Freeway Land Co)	UFO-99-R natural Pacific willow is dominant tree canopy area over creek Himalayan blackberry on steep banks connectivity level 3	Low to medium – well connected but seasonal cover and narrow, Himalayan blackberry a problem, lacks dead wood habitat	<ul style="list-style-type: none"> <li>• Widen riparian corridor and revegetate with native trees shrubs and herbs</li> <li>• Remove Himalayan blackberry and replace</li> <li>• Identify possible connecting areas to upland habitats and revegetate</li> </ul>



**Wildlife Habitat Protection and Improvement Site Specific Recommendations (Continued)**

Site by River Mile	General Habitat Description	Limiting Factors and Habitat Value	Recommendations
<p>6 61 Comer of Knapp Road &amp; I-205 (Freeway Land Co)</p>	<p>WM-99-R disturbed area mowed and being filled from north end, willow, rushes sedges dominate snags abundant along old stream channel, seasonal cover; connectivity level 2</p>	<p>Low to Moderate – land disturbed but still native plants hydrology and soils give site good potential for restoration of enhancement</p>	<ul style="list-style-type: none"> <li>• Possible contaminants from chemical and fuel tanks, parking lot runoff</li> <li>• Expand and diversify wet meadow area in SW corner of property to include emergent marsh, stop filling</li> <li>• At Bell Station, remove vegetation in channel to accommodate flood control goals, bioengineer new bank and revegetate per Profile #5</li> <li>• Maintain link to other habitats</li> </ul>
<p>7 24 (Freeway Land Co) S E at Smurfit, on south side of Johnson Creek</p>	<p>UFC-90-R developed/disturbed, dominated by 40-50 year old cottonwood, hawthorne, and flowering cherry Himalayan blackberry a dominant in shrub layer; ground cover mostly weed species snags and dead and downed wood common, barriers to wildlife from cyclone fence and industrial area to west, beaver sign and good birds seasonal cover; connectivity level 2</p>	<p>Moderate – lacks some species and structural diversity, but native plants and water present or available, good dead wood habitat for cavity nesters provides corridor from adjacent forest (to the southeast) and Johnson Creek</p>	<ul style="list-style-type: none"> <li>• Possible pollution from industrial sites to west</li> <li>• Control weeds and re-establish native understory</li> <li>• Potential to reconnect old channel and re-establish hydrology to marsh area to S W side of property, thereby improving connection to other habitats</li> </ul>
<p>7 4-8 06</p>	<p>UFO-99-R natural dominated by a mix of sapling and larger alder; H blackberry is dominant shrub, no snags, connectivity level 2</p>	<p>Low to medium – well connected, but seasonal cover and narrow, Himalayan blackberry a problem lacks dead wood habitat</p>	<ul style="list-style-type: none"> <li>• Widen riparian corridor and revegetate with native trees, shrubs, and herbs</li> <li>• Remove Himalayan blackberry and replace</li> <li>• Identify possible connecting areas to upland habitats and revegetate</li> </ul>
<p>8 06-8 63 (south of Franz Bread Co) (Brookside)</p>	<p>USS-99-R Narrow riparian strip dominated by a thicket of sapling alder and willow with a few scattered big leaf maple associated with upland wet meadow of H blackberry and various grasses, no snags, connectivity level 3</p>	<p>Low to medium – some species diversity but narrow zone of vegetation, has potential for enhancement</p>	<ul style="list-style-type: none"> <li>• Enhance riparian vegetation with native trees and shrubs</li> <li>• Restore old meanders and remove fill to provide ponded area and create wetland or wet meadow edge</li> </ul>
<p>8 63-9 6</p>	<p>UFC-20-R disturbed and natural, mixed conifer canopy dominated by western red cedar H blackberry dominates shrub layer in disturbed areas some openings that are grassed (lawns) connectivity level 2</p>	<p>Medium – some diversity in the tree canopy shrub, and herbaceous layers, but problems with H blackberry and openings at creek side</p>	<ul style="list-style-type: none"> <li>• Control Himalayan blackberry and other exotics</li> <li>• Enhance riparian vegetation with addition of native shrub and herbs (See Profile #2)</li> </ul>





### Wildlife Habitat Protection and Improvement Site Specific Recommendations (Continued)

Site by River Mile	General Habitat Description	Limiting Factors and Habitat Value	Recommendations
9.6-10.25 (Bundee Pk included)	UFC-90-R natural forested riparian area dominated by alder with scattered cedar and big leaf maple, a few snags (alder) sword fern in ground layer, connectivity level 3 (at Bundee Pk)	Medium to high – native plants and some dead wood habitat, well connected high potential for enhancement	<ul style="list-style-type: none"> <li>Control exotic plants</li> <li>Revegetate north bank at Bundee Pk with natives plants</li> <li>Add downed logs</li> <li>Protect side drainages</li> </ul>
10.27-12.52	UFC-99-R natural, narrow riparian vegetation dominated by sapling alder, scattered shrubs - rose and H blackberry, open grassy areas to creek, no snags, connectivity level 2	Low to medium – some areas connected to upland habitats, paths of native shrub	<ul style="list-style-type: none"> <li>Control exotics</li> <li>Create snags where possible</li> <li>Maintain connection to upland habitats</li> </ul>
11.8 to 12.0	WSS-99-R natural, willow is dominant shrub in this community which has developed within the channel	High native vegetation that is rare within watershed, well connected	<ul style="list-style-type: none"> <li>Expand SS habitat into wider riparian area, if possible</li> <li>Coordinate proposed expansion with flood control element (see Profile #7)</li> </ul>
12.52 - 12.67 both sides	USS-80-R disturbed, riparian area with open shrub density, has been disturbed but connectivity level 3	Low – disturbed, dominated by non-natives, stream cover lacking, beaver activity within survey area	<ul style="list-style-type: none"> <li>Restore riparian vegetation</li> <li>Maintain connection to upland habitat</li> </ul>
At 12.59 south side	WMO-99-R natural open shrub layer, connectivity level 2	Low – invading Himalayan blackberry and very dense reed canary stand grass, natural but non-native	<ul style="list-style-type: none"> <li>Restore native vegetation and allow to succeed</li> </ul>
12.78 south side forest east of Jenne Road (upland site)	UFC-90-R natural, 80-100 year old fir and cedar, connectivity level 2	High – many native species (rare plants-tall bugbane), seep present large block of habitat	<ul style="list-style-type: none"> <li>Protect butte</li> <li>Control exotic plant invasion on fringes</li> </ul>
12.67 - 13.03 both sides	WSS-99-R natural and disturbed, closed shrub canopy, connectivity level 2	Medium – has Springwater Trail through area, but vegetation is mostly native, beaver present	<ul style="list-style-type: none"> <li>Enhance habitat through control of exotic plants and revegetate with native plants</li> </ul>
13.03 - 13.07 north side	UFO-40-R natural and disturbed, includes Cedarville Park, cedar and big-leaf maple with some 36" dbh trees, 50-100 years age range, few shrubs - manicured, older alder making snags connectivity level 2	Low – shrub layer not developed, creek side lacks vegetation	<ul style="list-style-type: none"> <li>Add native shrub and herb layer within riparian zone</li> </ul>
13.07 - 13.38 North side (north of Springwater Trail)	UFC-70 natural, includes weedy meadow along trail, occasional large cedar (36" dbh) some 100 tall fir and cedar snags rare connectivity level 1	Medium to High – mostly native moderate problem with holly ivy and Himalayan blackberry not well connected (if exotics removed would become native forest)	<ul style="list-style-type: none"> <li>Remove exotic plants</li> <li>Create snags where possible</li> </ul>



**Wildlife Habitat Protection and Improvement Site Specific Recommendations (Continued)**

Site by River Mile	General Habitat Description	Limiting Factors and Habitat Value	Recommendations
13 38 - 13 58 overlays 190th	USC-99-R disturbed, mostly H blackberry, no dominant tree but has scattered ash trees shrub layer dominated by H blackberry beaver activity, connectivity level 2	Low – mostly disturbed and dominated by Himalayan blackberry	<ul style="list-style-type: none"> <li>Investigate hydrology for possible restoration of wetland forest</li> </ul>
13 58 - 13 88 north side	WFC-99-R natural, extensive H blackberry, mostly 15-20 year old trees with some older alder, snags lacking connectivity level 2	Medium – good natives but many trails, H blackberry and possible pollution from the subdivision to north of site	<ul style="list-style-type: none"> <li>Allow tree canopy to succeed naturally</li> <li>Enhance with native shrubs and herbs</li> <li>Remove and control Himalayan blackberry</li> </ul>
13 88 - 13 90 (mouth of Butler Creek) both sides	UFC-50-R natural alder and cedar (60 years old), salmonberry and Douglas-fir dominate, grazed by 14th street Potential tall bugbane habitat south of creek, coyote sign, connectivity level 3	Medium to high – young forest but relatively undisturbed	<ul style="list-style-type: none"> <li>Protect habitat</li> <li>Control grazing in riparian zone</li> <li>Maintain connection to uplands</li> </ul>
13 90-14 30	UFC-99-R that connects to WFC-99-R as above under RM 13 58	as above	<ul style="list-style-type: none"> <li>expand small open area to provide additional aquatic habitat for wildlife and fish</li> <li>Revegetate with native plants and control H blackberry</li> </ul>
14 30 - 15 34 (east of 209th) both sides	UFC-99-R very disturbed and weedy, few trees, H blackberry dominated, connectivity level 1, beaver dam	Low – Himalayan blackberry and no riparian shade	<ul style="list-style-type: none"> <li>Revegetate riparian zone</li> <li>Control exotic</li> </ul>
15 34 - 15 42 south side (upland)	UM-99-R natural, H blackberry, fescue and canary grass dominate, old grazing area, connectivity level 2	Low – little variety and extensive exotic invasion, poor connectivity	<ul style="list-style-type: none"> <li>Control exotic plants and replace with natives</li> <li>Revegetate</li> <li>Burn and reseed with native grasses/forbs</li> </ul>
15 42 - 15 58 both sides	WFO-60-R natural, 40' ht shrubs include H blackberry and red osier dogwood willow beaver, connectivity level 2	Mod to Low – no recent disturbance street drainage may be a problem	<ul style="list-style-type: none"> <li>Remove and replace exotic plants</li> <li>Control possible street drainage</li> </ul>
15 58 - 15 83 both sides	UFC-90-R natural, 60 alder and ash uniform blackberry, snags are rare, connectivity level 2	Low – underdeveloped and poor diversity in shrub and herb layer	<ul style="list-style-type: none"> <li>Remove Himalayan blackberry</li> <li>Revegetate with native shrubs and herbs</li> <li>Enhance snag habitat, where possible</li> </ul>
16 13 - 16 58 (Along Springwater Trail) both sides	WFC-50-R natural, willow and alder forest, native shrubs connectivity level 3	High – excellent songbird (especially alder) habitat for neo-tropical migrants, habitat in urban area	<ul style="list-style-type: none"> <li>Protect habitat</li> <li>Plant native grasses and forbs along Spring Water Trail</li> <li>in old channel meander (RM16 1- 2) expand and reconnect where possible, remnant wetlands</li> </ul>



### Wildlife Habitat Protection and Improvement Site Specific Recommendations (Continued)

Site by River Mile	General Habitat Description	Limiting Factors and Habitat Value	Recommendations
16 21 - 17 06 (Walter's Hill) both sides	UFC-50-R natural, forested and residential, big-leaf maple, fir and alder with hazelnut and salmonberry diverse, healthy but some problems, connectivity level 2	High – good diversity of native plants, possibility of springs, large block of habitat	<ul style="list-style-type: none"> <li>Protect habitat</li> </ul>
17 06 - 17 98 westside	UFC-90-R natural alder 70' & 50-60 yrs old, salmonberry and sword fern, snags uncommon, connectivity level 2	Low to Medium – low diversity but many native species, beaver present	<ul style="list-style-type: none"> <li>Enhance with plantings of native conifers, shrubs, and herbs</li> <li>Check possible illegal fill at road expansion</li> </ul>
17 98 - 20 00 (Brck factory area) both sides	UFC-99-R natural, alder with cedar just ea of 252nd, native shrubs, good shading, snags common in places, scattered large trees, connectivity level 2	Medium to High – young forest but good natives, difficulty of public access provides protection to resources	<ul style="list-style-type: none"> <li>Protect habitat</li> <li>Create downed wood habitat</li> <li>Control livestock access to creek</li> </ul>
18 53 - 18 65 (east side at 252nd)	WFC-80-R natural, ash of uniform size with some large cottonwood (80'), wild rose, slough sedge, no snags, connectivity level 2	High – uncommon habitat type with dominant native plants	<ul style="list-style-type: none"> <li>Protect habitat.</li> <li>Enlarge wetland forest into pasture area</li> </ul>
20 00 east side (same forest so of Hwy 26)	UFC-60-R natural, alder and big leaf maple at 60+ yrs, some ash with cedar, few snags, connectivity level 2	Moderate to High – undisturbed, good native plant diversity, but broken by freeway	<ul style="list-style-type: none"> <li>Protect habitat</li> <li>Connect fragments under freeway</li> </ul>
20 33 - 20 81 (E Hwy 26, N Stone Rd) both sides of creek	WFO-60-R disturbed, 30 year old alder, native shrubs, reed canary grass, connectivity level 2	Low – poor diversity and possible pollution	<ul style="list-style-type: none"> <li>Control pollution sources</li> <li>Enhance habitat with native plants</li> </ul>
at 282nd	Mowed ditch draining to J Creek, has some parking lot drainage adjacent to "Precision Products"	Low – mowed	<ul style="list-style-type: none"> <li>Restore riparian vegetation along mowed ditch</li> </ul>
20 81 - 21 08 both sides	WFC-90-R disturbed, 40 yr old ash, occasional taller cottonwood, lawn grasses, mink, connectivity level 2	Low – many yards no native plants in understory, some potential pollution from nurseries	<ul style="list-style-type: none"> <li>Add native shrub and herb layer</li> <li>Identify and control potential pollutants</li> <li>Remove electric fence in creek</li> </ul>
21 08 - 21 87 (at junction of Stone and Short roads) both sides	WFO-60-R disturbed and agricultural alder, ash, and some cotton- wood forest H blackberry, no snags, reed canary grass connectivity level 2	Low – often very narrow riparian hayed and grazed, chemicals/cows present	<ul style="list-style-type: none"> <li>Enhance shrub layers in riparian area</li> <li>Control cattle access</li> <li>Create snags, where possible</li> <li>Ensure cottonwood recruitment (See Profile #3)</li> </ul>
Break in riparian zone at 21 87- 21 96	Grazed area reed canary grass no riparian vegetation	Low – no vegetation cover	<ul style="list-style-type: none"> <li>Restore riparian vegetation</li> <li>Control livestock access to creek</li> <li>Remove reed canary grass (Profile #3)</li> </ul>



**Wildlife Habitat Protection and Improvement Site Specific Recommendations (Continued)**

Site by River Mile	General Habitat Description	Limiting Factors and Habitat Value	Recommendations
22 41 - 22 99 both sides (east and west of Pleasant Home Rd )	WFC-80-R disturbed, alder and ash dominate, 30-yr old forest H blackberry, possible springs snags are common, connectivity level 4	Moderate to High – many native plants good songbird and woodpecker habitat, well connected high potential for enhancement	<ul style="list-style-type: none"> <li>• Protect habitat</li> <li>• Control Himalayan blackberry (See Profile #3)</li> </ul>
22 99 - 23 24 both sides (east of Pleasant Home Rd )	UFC-60-R parts natural, others disturbed, big leaf maple and Douglas-fir dominate, vine maple, small area of palustine wetlands, no snags, connectivity level 2	Moderate to High – native plants plus some wetland areas lacks shrubs and dead/down wood	<ul style="list-style-type: none"> <li>• Add native shrubs and herbs</li> <li>• Create or add dead wood habitat</li> <li>• Enhance wetland and protect</li> </ul>
23 24 - 23 40 both side (west of Bluff Rd )	UFC-20-R natural and developed 70-yrs old cedar Douglas-fir, salmonberry dominate possible springs snags and little dead/down wood, connectivity level 2	Moderate – native plants but little diversity, ivy is encroaching	<ul style="list-style-type: none"> <li>• Enhance native plant diversity in all layers</li> <li>• Control ivy</li> <li>• Protect springs</li> </ul>
23 40 - 23 60 both sides (begins at east side of Bluff Rd between Bluff Rd and 327th)	WFO-70-R disturbed 25 yrs old, alder and willow dominate snags lacking, H blackberry encroaching, connectivity level 2	Moderate – young forest with mix of native and exotic plants, H blackberry and reed canary grass could be a problem	<ul style="list-style-type: none"> <li>• Replace exotic plants with natives</li> </ul>
23 60 - 24 90 both side (east of 327th at S E end of large pond)	UFC-90-R disturbed and agricultural, 40-yr old forest of alder with pasture grasses underneath, snags rare, connectivity level 3	Low – poor structural and species diversity, culvert at 347th emptying possible contaminants into creek	<ul style="list-style-type: none"> <li>• Correct potential water quality problem</li> <li>• Add native trees, shrubs, and herbs</li> <li>• Control livestock access to creek</li> </ul>
24 90 - 25 05 both sides  (E 347th and water tower)	UFC-20-R natural, Douglas-fir, cedar and alder 70 year old forest, H blackberry, some snags, tall stumps, connectivity level 2	Moderate to High – good natives in over-and understones, snag habitat	<ul style="list-style-type: none"> <li>• Protect habitat</li> <li>• Control exotic plants</li> <li>• Remove dam in creek</li> </ul>
<b>UPPER JOHNSON CREEK TRIBUTARIES</b>			
25 05 - headwaters	UFC-99-R disturbed, red alder: no access for survey		Protect headwater by maintaining native vegetation (see Profile #8)
Kelley Creek both sides (mouth at Johnson Creek below Foster Rd )	UFC-80-R disturbed, residential 75 years old Douglas-fir and cedar dominate, shrub layer scattered sword fern and trailing H blackberry in ground cover, no snags connectivity level 1 (to Johnson Creek) cover broken by roads	Moderate – some native plants but under-manicured by residents leaving poorly developed shrub and herb layer, rock walls at pond block passage for fish	<ul style="list-style-type: none"> <li>• Add native shrub and herb layer</li> <li>• Remove fish barriers (See Profile #4)</li> </ul>

**Wildlife Habitat Protection and Improvement Site Specific Recommendations (Continued)**

Site by River Mile	General Habitat Description	Limiting Factors and Habitat Value	Recommendations
Kelley Creek above (south of) Foster Rd east side of 162nd	UFC-40-R natural and disturbed, trash in creek area by road, cedar and big-leaf maple, salmonberry and swordfern dominate springs possibly present, snags & dead/down wood rare, connectivity level 2	Moderate – mix of natives and exotics but lacks some structural diversity	<ul style="list-style-type: none"> <li>• Enhance native tree, shrub, and herb layers</li> <li>• Protect springs</li> <li>• Add downed logs in aquatic and upland habitats (Profile #4)</li> </ul>
Kelley Creek at crossing with Richey Rd (east of Foster Rd)	WFO-60-R, disturbed, scattered larger (100) cottonwoods and Douglas-fir in alder-dominated forest, H blackberry is dominant shrub, mowed and grazed in areas, possible springs snags rare connectivity level 2	Low to Moderate – mostly native species but lacks structural diversity, needs more riparian vegetation opportunity in flat areas to restore wetland areas	<ul style="list-style-type: none"> <li>• Enhance riparian vegetation</li> <li>• Restore wetlands in flat areas</li> <li>• Create snags where possible (Profile #4)</li> </ul>
Kelley Creek west of Rodlun Rd	UFC-80-R disturbed and agricultural, 60-80 yr old forest, Douglas-fir and cottonwood up to 120' tall, no dominant shrub and pasture grasses in herb layer no snags, mainly agricultural land, connectivity level 2	Low to Medium – lacks structural diversity in understory and ground layers but good potential for improvement	<ul style="list-style-type: none"> <li>• Enhance shrub and herb layers</li> <li>• Control livestock access (Profile #4)</li> </ul>



### Wildlife Habitat Protection and Improvement Site Specific Recommendations (Continued)

Site by River Mile	General Habitat Description	Limiting Factors and Habitat Value	Recommendations
<b>UPPER JOHNSON CREEK TRIBUTARIES</b>			
Unnamed Trn #1 Kelley Creek N of Mitchell Creek	UFC-70-R natural, Douglas-fir and cedar dominate, cedar in midstory also, 50-60 yrs old, H blackberry in shrub layer; possible springs, snags rare, dead/down wood common connectivity level 1 (to Kelley Creek)	Medium – fair species and structural diversity, cedar regeneration not common in urban areas, some problems with H blackberry ivy and holly	<ul style="list-style-type: none"> <li>• Control exotics</li> <li>• Enhance shrub and herb layer with native plants</li> <li>• Protect springs</li> </ul>
Unnamed Trn #2 - Kelley Creek at Pleasant Valley School	WFO-70-R natural and disturbed alder/ash forest, native shrubs, including snowberry, plus exotics (H blackberry) possible springs, connectivity lacking for surface resources but connected somehow hydrologically	Medium – mix of native/non-native but good structural diversity, excellent songbird habitat potential environmental educational opportunity for school	<ul style="list-style-type: none"> <li>• Enhance wetland forest</li> <li>• Control exotics and replace with native plants</li> <li>• Explore opportunity for ecological education at nearby school (See Profile #6, 4)</li> </ul>
Mitchell Creek W of 162nd	UFC-60-R natural, alder/cedar forest 60-80 yrs old salmonberry and H blackberry dominate shrub layer; trailing blackberry dominates herb layer, potential tall bugbane habitat snags uncommon	Medium to High – good species and structural diversity with a few problems, dumping and potential pollution from package plant	<ul style="list-style-type: none"> <li>• Protect riparian vegetation</li> <li>• Create snags, where possible</li> <li>• Control potential pollution from package plant</li> <li>• Remove illegal road crossing (See Profile #4)</li> </ul>
Mitchell Creek cont'd E of 162nd	UFC-10-R natural, 60-yr old Douglas-fir and cedar forest with hazelnut and trailing blackberry and swordfern as shrub and herb dominant, appears to have been thinned about 20 yrs ago, snags uncommon and dead/down wood rare, a few scattered 36" dbh Douglas-fir; connectivity level 1 (to Kelley Creek)	Medium – nice mix of native plants in all layers, poor connectivity, disturbance potential from adjacent housing	<ul style="list-style-type: none"> <li>• Protect native riparian vegetation</li> </ul>
South Fork Butler Creek "Black Locust Square"	UFC-99-R disturbed, red alder and big-leaf maple are dominant, except SW section of forest is nearly a pure stand of black locust shrub layer dominated by salmonberry, hazel, vine maple, and Himalayan blackberry, ground cover dominant include trailing blackberry and sword fern snags and downed wood rare, connectivity level 1	Low to Moderate – native vegetation present but site lacks connection to other habitats, dead wood habitat lacking	<ul style="list-style-type: none"> <li>• Control Himalayan Blackberry and black locust trees</li> </ul>
"Sunshine" Creek Trn to Johnson Creek, whose mouth is at Telleford Rd at dead end of Hideaway Rd	WFO-70-R natural alder/willow forest some H blackberry and reed canarygrass springs possible, beaver dams snags rare, connectivity level 2 Note No access into site - private land	Medium to High – some H blackberry encroachment and grazing problems but series of beaver dams have created ponds and wetlands	<ul style="list-style-type: none"> <li>• Protect habitat at streamside and connect uplands</li> <li>• Control livestock access</li> <li>• Control Himalayan blackberry (See Profile #3 4)</li> </ul>



### Wildlife Habitat Protection and Improvement Site Specific Recommendations (Continued)

Site by River Mile	General Habitat Description	Limiting Factors and Habitat Value	Recommendations
N of dead end, west of Hideaway Rd	UFC-99-R natural, disturbed and agricultural 40 yr old uniform alder forest, salmonberry, elderberry and Himalayan blackberry are dominant shrubs, buttercup and pasture grasses dominate herb layer; connectivity level 2 (upstream and downstream)	Low – poor species and structural diversity generally, grazing into creek, Himalayan blackberry problem, fill problems	<ul style="list-style-type: none"> <li>• Enhance riparian vegetation</li> <li>• Control Himalayan blackberry</li> <li>• Control livestock access</li> <li>• Remove potential illegal fill on eastside of creek</li> </ul>
Unnamed tributary to Johnson Creek South side at 282nd & Stone Rd both sides	UFC-60-R natural, big-leaf maple and cedar forest, no dominant shrub, swordfern dominates herb layer, springs present no snags or dead/down wood, connectivity level 1 (to Johnson Creek)	Low – poor diversity, surrounded by ag and rural residential areas with potential pollution problems	<ul style="list-style-type: none"> <li>• Add native shrub layer</li> <li>• Protect springs</li> <li>• Create snags, where possible</li> <li>• Control potential pollution sources</li> </ul>
Hogan Creek (enters Johnson Creek just east of brick factory)	UFC-80-R natural and disturbed, forest dominated by red alder, big-leaf maple, Douglas-fir and other conifers, sand and gravel operation near headwaters, snags rare, connectivity level 3	Medium to High – contains native plants and is connected to larger blocks of interior forest habitat and interspersed with open pasture/meadow habitats	<ul style="list-style-type: none"> <li>• Replant riparian area where sparse at sand and gravel operation</li> <li>• Protect interior forest habitat</li> <li>• Dense riparian area where vegetation is impacted by livestock</li> </ul>
<b>UPLAND HABITATS</b>			
86th Avenue Forest	UFC-80-R natural, dominant trees include Douglas-fir, big-leaf maple and red alder shrubs include Oregon hazel, vine maple, and Himalayan blackberry, no snags or downed wood, Johnson Creek goes through site, connectivity level 1	Medium – although shrub layer and ground cover is sparse, site provides only real upland habitat between Johnson Tideman Park and Mt Scott, area is protected from human disturbance by perimeter of blackberry	<ul style="list-style-type: none"> <li>• Remove Himalayan blackberry in understory and garbage</li> <li>• Revegetate tree, shrub, and herb layer with native plants</li> </ul>
Upland Habitat SE of Freeway Land Co at 112th Street	UFC-60 natural, upland forest dominated by big-leaf maple with Douglas-fir and western red cedar, Himalayan blackberry dominates shrub layer with swordfern and trailing blackberry as dominant ground covers, tall bugbane present possible springs, snags and downed wood rare, yew present mix of bird species, year round cover connectivity level 1	Moderate – good mixture of native plants in all layers, dead wood habitat and linkage to other habitats missing however, provides important block of upland habitat for plants and animals	<ul style="list-style-type: none"> <li>• Control weeds/invasers block access to ORV field to south</li> <li>• Enlarge forest link to north to Johnson Creek</li> </ul>



**Wildlife Habitat Protection and Improvement Site Specific Recommendations (Continued)**

Site by River Mile	General Habitat Description	Limiting Factors and Habitat Value	Recommendations
Walter's Hill Complex (40, 41, 42) (Borng Lava Hills)	UFC-80 natural and disturbed, alder, big-leaf maple and Douglas-fir dominate shrubs include vine maple, salmonberry and Himalayan blackberry, few snags but large scattered stumps and log, trails and driveways in site, connectivity level 2 (by several small creeks to Johnson Creek)	Medium to High – large block of forested land on a series of linked hills, several drainages occur within complex	<ul style="list-style-type: none"> <li>• Replace Himalayan blackberry with native shrubs</li> <li>• Control motorcycle use on trails</li> <li>• Maintain low density housing</li> </ul>
Jenne Butte (also see RM 11 78 above for north slope description)	UFC-70-R natural, overstory dominated by Douglas-fir, big-leaf maple, red alder, and some cedar, shrubs include blue elderberry, vine maple, hazel, and domestic cherry, herb layer includes sword fern stary Soloman's seal, and baldhip rose snags few and scattered, some hiking and horse trails and domestic animals (sheep, goats) use, connectivity level 3	High – species and structural diversity of native plants well connected, large block of habitat, several small drainages lacks snags and has potential for increased disturbance	<ul style="list-style-type: none"> <li>• Protect butte</li> <li>• Control exotic plant invasion on frnges</li> <li>• Control domestic livestock</li> <li>• Maintain open space comdor to the northeast and drainage to Kelley Creek</li> </ul>
Bundee Park (at Deardorff Bndge)	UFC-70-R natural, overstory dominated by Douglas-fir, big-leaf maple, red alder, and some cedar; shrubs include blue elderberry, vine maple, hazel, and domestic cherry, herb layer includes sword fern stary Soloman's seal and baldhip rose, snags few and scattered, some hiking and horse trails and domestic animals (sheep, goats) use, connectivity level 3	High – high species and structural diversity of native plants, snags and nver meander, site used as model for native npanan forest	<ul style="list-style-type: none"> <li>• Protect park and expand, if possible</li> <li>• Stabilize north bank east of bndge</li> </ul>
Barbara Welch at Foster Road	WFC-99-R natural, steep banks dominated by young alder, big-leaf maple, willow, and Himalayan blackberry, connectivity level 2	Medium – good species and structural diversity, well connected to Johnson Creek and upland sites, steep banks are unstable and dead tree habitat is lacking	<ul style="list-style-type: none"> <li>• Replace Himalayan blackberry with native plants</li> <li>• Continue revegetation of Ripanan strtp to stabilize bank and control erosion</li> </ul>
Barbara Welch Rd Uplands (pt of Borng Lava Hills)	UFC-80 natural upland forest dominated by Douglas-fir, big-leaf maple red alder, and some cedar shrub and forb layer also dominated by natives, connectivity level 3	High native species dominate with vegetation developed in all layers, well connected, and water exists as seeps and small drainages	<ul style="list-style-type: none"> <li>• Protect upland habitat</li> <li>• Remove exotic vegetation</li> </ul>





### Wildlife Habitat Protection and Improvement Site Specific Recommendations (Continued)

Site by River Mile	General Habitat Description	Limiting Factors and Habitat Value	Recommendations
Powell Butte	UFC-70 and UM natural and developed this site is unique in that it contains two major habitat types the meadow has been grazed and contains some invading hawthorn shrubs, the forest is mature maple and alder with 30-50 year old Douglas-fir, standing dead wood is common with some dead and down wood from windthrow	High upland meadow habitat is rare within the metropolitan area, native species dominate and the area is well connected	<ul style="list-style-type: none"> <li>Protect encroachment of forest especially on south side where habitat joins the creek riparian area</li> <li>Remove and replace Himalayan blackberry and exotic grasses with native plants</li> </ul>
Kelly Butte (south slope only)	UFC, WFC, WSS and UM natural This butte possess a mixture of forest (western hemlock) wetlands, and meadow The south slope contains the only known population of wild trout lilies within Portland, dominant trees include Douglas-fir, western hemlock and Pacific dogwood, shrubs include western hazel, Oregon grape, wild rose and vine maple, forb layer is a diverse mix of native species	Medium to high the area is surrounded by development and roads but has several habitat types and has two rare plant communities - western hemlock forest and wild trout lilies	<ul style="list-style-type: none"> <li>Protect butte from further development especially along south slope within the Johnson Creek watershed</li> </ul>
Unnamed Butte (N, E, and W Slopes only), headwater to Sunshine Creek	UFC-90-R natural large block of forested habitat similar to other upper watershed buttes, dominant trees include Douglas-fir, big-leaf maple, western red cedar, and alder, water present as small drainages and seeps, connectivity level 2	High native plants are dominants, water is present, and the area is well connected to other habitat types on all sides	<ul style="list-style-type: none"> <li>Protect area from fragmentation and invasion of exotic plants</li> </ul>
Mt Scott	UFS and UFC-80-R natural and disturbed forest canopy is dominated by Douglas-fir, maple, and alder but part of site has been developed for housing and open agricultural field contains Veterans Creek connectivity level 2	Medium to high although part of the area has been disturbed the site has potential for improvement along Veterans Creek and is connected to wetland habitat and Johnson Creek	<ul style="list-style-type: none"> <li>Protect area</li> <li>Enhance habitat along Veterans Creek by revegetating riparian area and adjacent buffer zone with native plants</li> <li>Control exotic invasive plants</li> </ul>
Willamette Cemetery Hill Lincoln Memorial PK	Open developed area and UFC on north and east slopes natural and disturbed open canopied forest of native trees including Douglas-fir, big-leaf maple and alder developed for cemetery and planted with non-native trees and shrubs has small tributary creek to Veterans Creek, connectivity level 2	Low large disturbed area with many non-native plants	<ul style="list-style-type: none"> <li>Protect remaining forest</li> <li>Plant buffer area between cemetery and forest with native shrubs and forbs</li> </ul>



**Wildlife Habitat Protection and Improvement Site Specific Recommendations (Continued)**

Site by River Mile	General Habitat Description	Limiting Factors and Habitat Value	Recommendations
Wetland Sites, including wet meadows (Freeway – Land Co), wetland shrub/scrub habitats (middle reaches), and open and closed canopied wetland forest habitats (upper basin)	details given above by mainstem river mile or in upland habitat section	Values are mostly high for all wetland habitats because of their rarity within the watershed	<ul style="list-style-type: none"> <li>• Protect all sites</li> <li>• Enhance or expand habitat where possible</li> <li>• Determine boundaries of existing wetland and potential boundary for enlarged wetland</li> <li>• Develop site-specific plans</li> <li>• Remove exotic vegetation</li> <li>• Fence where necessary</li> </ul>

**Notes**

**Low Habitat Value** Generally applied to areas lacking in vegetative and wildlife species diversity, lacks structural diversity, e.g., only one to two vegetative layers present and age class diversity is noticeably absent canopy closure is less than 30% which will not provide sufficient shade to control stream temperatures (if present) or provide thermal cover for wildlife, completely or mostly non-native species

**Medium Habitat Value** Generally applied to areas with some vegetative and wildlife species diversity, provides at least two vegetative layers (tree, shrub, and herbaceous), structural diversity also includes a variety of age classes with possibly some recruitment of young trees, canopy closure can range from 30% to 60% providing shade and thermal cover; plants may be a combination of native and non-native, water is present or nearby

**High Habitat Value** Generally applied to areas with a high level of vegetative and wildlife species and structural diversity, canopy closures range from 60-100% providing excellent shade and thermal cover, all vegetative layers are well developed and are dominated by native species or non-natives that are not invasive and provide food or shelter for wildlife, water is available



### Wildlife Habitat Protection and Improvement Site Specific Recommendations (Continued)

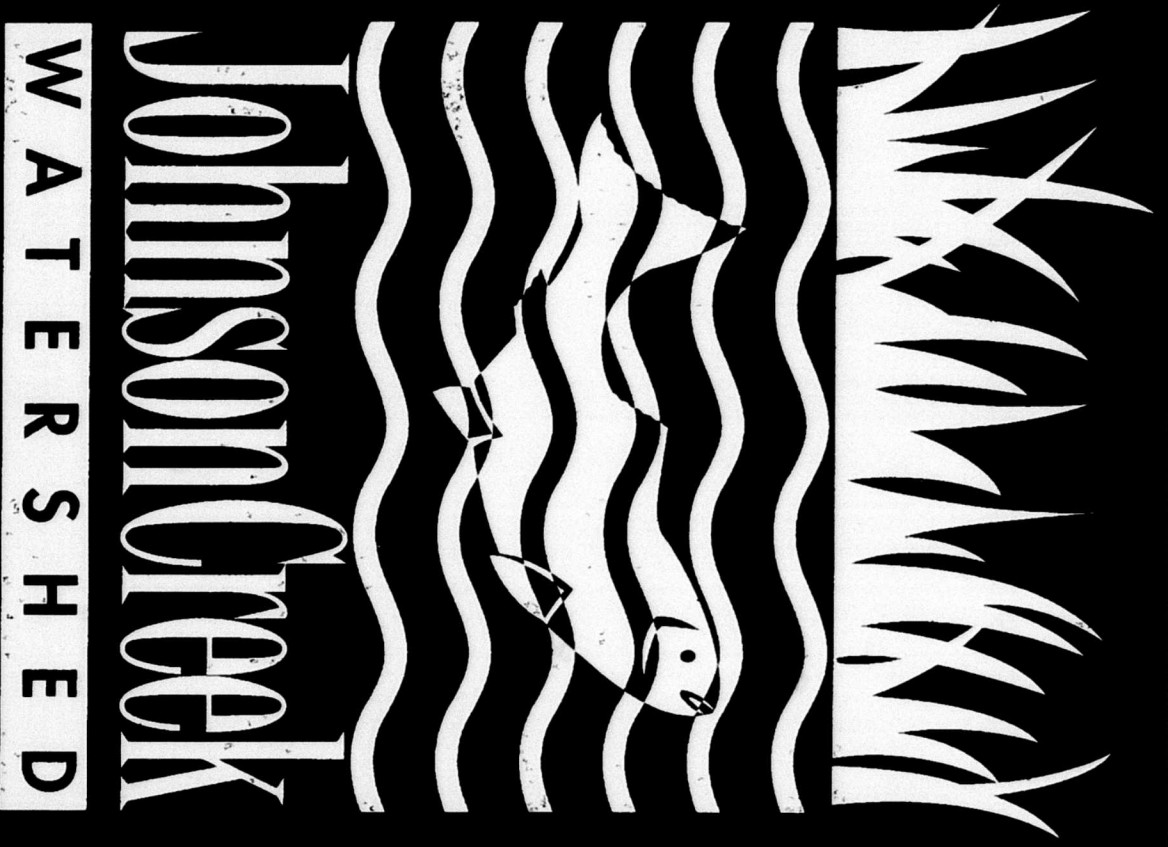
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**A River Runs Through Us**

*Your guide to the past, present and future of Johnson Creek  
The Johnson Creek Resources Management Plan*

• • • • •

*As a resident of the Johnson Creek area, you have a vested interest in the stream and surrounding environment. The Johnson Creek Corridor Committee, working closely with the City of Portland Bureau of Environmental Services, and other cities and counties, has developed a new and comprehensive plan for your watershed. Unlike past plans, this serves as a guide for pollution prevention, flood management and fish and wildlife enhancement. But perhaps the most important element is watershed stewardship. Living in the Johnson Creek watershed, you're more than just an interested reader—you're an active participant and steward of the land. It's up to you and your neighbors to make this plan succeed by restoring Johnson Creek to its once natural beauty. To that end, the Johnson Creek Resources Management Plan is a living, breathing document—open to your ideas and suggestions. Together, we can change the face of Johnson Creek for good.*



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# **Of Arrowheads and Artifacts**







# Stream of Consciousness

The region we live in abounds with natural beauty. A beauty that can be enjoyed whether you're biking along a tree-lined street, skinning down a white-capped mountain or just relaxing in the cool grass on a warm summer afternoon. And while we often wish for a little less rain each year, we relish the fact that our area has been blessed with a plentiful amount of rushing water.

To the residents of Gresham, Portland and Milwaukie, that water takes the form of Johnson Creek—one of the last free-flowing streams in the Portland metropolitan area. Johnson Creek begins near Cottrell, then flows westward some 25 miles before emptying into the Willamette River.

The Johnson Creek watershed encompasses more than 54 square miles of agricultural land, residential neighborhoods and commercial businesses. In all, roughly 130,000 people live in the Johnson Creek watershed.

## Progress comes with a cost

Like many urban waterways, Johnson Creek has not fared well in the face of urbanization. Much of the watershed has been converted from pristine forests filled with natural wildlife habitats, to farms, cities and ever-increasing suburbs.

As the area has developed, the creek itself has been on a steady decline—changing from a natural, meandering stream into an often-polluted drainage channel. Even though flooding

has occurred for centuries, flood damage has dramatically risen because we have built over the natural flood plain. Wildlife habitat is badly degraded and the historic salmon runs have dwindled to almost nothing. Vegetation native to the area is being built over and uprooted. With each new home and business comes additional water pollution—from over-fertilization in the yard, motor oil dripping on the street, bare soil and other things that eventually drain into the stream.

## Getting residents involved

The cornerstone of this new approach to planning was the formation of the Johnson Creek Corridor Committee. Membership includes representatives from neighborhood groups, cities and counties, business and agriculture, as well as several state and federal agencies. Their mission? Creating the Johnson Creek Resources Management Plan.

*Ditch water is never dull. It teems with quiet fun.*  
—G K Chesterton

Beaver track pattern



## A Blueprint for Change



The Johnson Creek Resources Management Plan is a long term vision of realistic ideas on how to improve and manage the Johnson Creek watershed. With broad brushstrokes, the plan paints the big picture—with ideas and actions that everyone can do to make the area a better place to live.

Instead of being merely a guide for flood control, the Johnson Creek Resources Management Plan is organized into four integrated sections—Pollution Prevention, Flood Management, Fish and Wildlife Enhancement and Watershed Stewardship. And while the plan's complexities and details are too numerous to describe here (a brief summary of each section follows), the goals are simple. Set a course of action that will protect natural resources and improve the quality of life in the watershed over the next 50 years.

### 1. Pollution Prevention

There once was a time when natural factors alone—such as topography, soil and vegetation—influenced the water quality of Johnson Creek. Then came people, and with them logging, agriculture and urban development—all factors that have radically changed the environmental make-up of the watershed, and with it, the nature of the substances entering the creek.

Like many urban rivers in the United States, the condition of Johnson Creek deteriorated greatly from the 1940s through the 1960s. Nationally, concern about environmental problems grew,

leading to a variety of state and national legislation, including the federal Water Pollution Control Act of 1972. Here in Oregon, the Department of Environmental Quality (DEQ) has established guidelines for water quality, including that of Johnson Creek. The pollution prevention section of the Johnson Creek Resources Management Plan builds on and adds to these existing programs.

#### Identifying the source

Thanks to more than 20 years of pollution control work, raw sewage and industrial waste dumping into the creek have been virtually eliminated. The most important remaining source of pollution comes from everyday living. As it rains, the water on the ground picks up everything it touches—fertilizer and pesticide from your yard, moss killer from your roof, leaking oil and antifreeze from your driveway, dirt and manure from your garden—then carries it to the stream. No one does this on purpose, but it's water pollution just the same. The goal of the pollution prevention section of the Plan is to educate area residents on how common household pollution can be stopped, which in turn will help breathe new life back into the creek. Here is a brief look at some of the proposed actions:

© All urban stormwater management plans in the area will be aggressively implemented—particularly the requirement to stop industrial pollution from entering to municipal stormwater systems.

- ③ To prevent stormwater from becoming polluted, stormwater treatment facilities to clean up the water will be required for all new development, as well as for significant re-development
- ③ Fifteen stormwater quality improvement facilities will be built in drainage sub-basins. These sub-basins currently discharge relatively large amounts of pollutants into the creek.

## *2. Flood Management*

Ever since people first started building houses and developing the land, there has been an ongoing desire to tame the environment. Farmers straighten the course of a stream to preserve farm lands and simplify irrigation. Natural flood plains are urbanized because the land there is flat and easy to develop. Creek channels are filled, bridged and altered to make the spread of progress a little easier. At the same time, however, the creek is expected to carry away the increased water run-off flow that comes from development of the watershed.

The result is flooding—flooding of homes, businesses, streets and parks throughout the Johnson Creek watershed. Several attempts were made in the 1970s and '80s to solve the flooding problem, but with no success.

### **Managing the waters**

The traditional approach to flood control in city environments has been to "improve" the stream's natural channel so it can handle a

higher water flow. This was the approach taken by the Works Progress Administration when it widened and rock-lined Johnson Creek in the 1930s. History shows that as development continues and the original landscape is further altered, flooding on Johnson Creek will become more frequent.

What's more, maintaining and enhancing the natural beauty of the stream is in conflict with the conventional method of flood control, which involves building concrete channels like the Los Angeles River.

Today, the Johnson Creek Corridor Committee has developed a plan to reduce flood damage, as one part of the comprehensive Johnson Creek Resources Management Plan. The goal is to minimize the impact of flooding, while preserving and restoring natural areas within the watershed. The proposed actions would reduce damage to existing vulnerable properties and prevent future development from making flooding worse. Here is a brief look at the proposed actions:

- ③ The properties most vulnerable to flooding will be acquired from people willing to sell
- ③ Building in the 100-year flood plain will be restricted to stop the loss of flood water storage. This will help prevent increases in flood-water levels
- ③ Stream channels will be regularly maintained so their capacity to carry flood waters will remain fairly constant
- ③ Emergency response procedures will be established to minimize damage during floods

© On-stream detention basins will be built in the upper watershed. Earthen berms will hold back the water when it rains, helping maintain a flow that stays within the creek's banks. The detention basins will remain dry except during severe storms

### 3. Fish and Wildlife Habitat Enhancement

Waterways are a natural magnet for wildlife of all kinds. The Johnson Creek corridor contains a series of micro-environments that provide habitat for birds, mammals, reptiles, amphibians and fish. Some of these creatures live here permanently, while others visit as needed for food and shelter

Yet despite these patches of scenic beauty, development of the Johnson Creek watershed has had a devastating impact on the habitat of native wildlife. Almost all of the old-growth streamside vegetation has been removed, eliminating a primary source for food, shelter and protection. When areas of the stream were rock-lined for flood control, it prevented the river from meandering within its flood plain. Mud and soil settling on the bottom of the stream have damaged the habitat for fish and other aquatic life

#### The time for action is now

Despite these many problems, the Johnson Creek corridor remains a vital habitat for local wildlife. But continuing development pressures threaten the very lifeblood of the Johnson Creek corridor. The available space and necessary vegetation for

wildlife continues to slip away—bit by bit—as urbanization and development displace natural areas. It's a delicate balance between the needs of area wildlife and the needs of people living along the creek.

The goal, then, is to enhance wildlife habitat to the highest extent within the urban environment. Here is a brief look at the proposed actions:

- © Public agencies will protect ecologically sensitive or high-value wildlife habitats in the best manner possible — including acquisition of the wildlife habitat
- © Off-stream refuge areas will be constructed for native fish
- © Modifications will be made to key areas of the stream channel. This will be done by using logs and boulders in the creek to form calm pools, as well as natural hiding places for the fish. Overhanging vegetation will be planted to create shade and additional cover
- © Efforts will be made to keep enough water-flow in the creek during the summer to support fish and other aquatic life

*The stream won't be advised, therefore its course is crooked*

—West African saying

Where The Wild Things Are



## 4. *Watershed Stewardship*

The fourth and final aspect of the Johnson Creek Resources Management Plan addresses watershed stewardship. This section differs from the other three because it doesn't target a particular aspect of environmental quality. Instead, watershed stewardship is dedicated to improving the watershed as a whole. It's designed to integrate and balance environmental improvements with other human interests. These actions build on past work while complementing—and extending—current watershed stewardship efforts by local governments and citizen groups

### **At the helm**

Being the caretaker for Johnson Creek is a full-time job. Unfortunately, no single agency today has the welfare of the watershed as its main mission. Under the Johnson Creek Resources Management Plan, this will change. A citizen-run organization will be established to carry out the goals and ideals of the management plan. The structure and funding of this organization must be stable enough to manage a long-term plan—one that may take 50 years or more to fully implement.

### **The cycle of life**

As a resident of the watershed, you are responsible for the water and surrounding environment of Johnson Creek. No matter how far away you live from the stream, things you do in your house and yard will affect the water. All actions in the Johnson Creek watershed are interconnected. It is in everyone's interest to treat the watershed's natural resources with care and respect.

The goal of the watershed stewardship section of the plan is to create an awareness about the area's problems, then work together to aggressively enact appropriate solutions. It's up to you to stop using too much weed killer, watch for leaking motor oil and never dump anything down the storm drain. No matter how small these things may seem, your actions and what you do every day have a significant impact on the environment. In order to succeed, the watershed stewardship plan requires the fervent effort of residents and landowners, business interests and government agencies.

Area governments will also be responsible for setting in motion a broad spectrum of watershed-related activities. Here is a brief look at the proposed actions.

- A Johnson Creek Watershed Management Organization will be formed. This organization will foster a watershed stewardship ethic by acting as an educator, disseminator of information and organizer of volunteers.
- To maximize benefits, plans for creek improvements will be coordinated with improvements to the Springwater Corridor Trail, as well as parks and open spaces.
- Historic structures, including the best examples of the Depression-era rockwork that line the creek and Native American artifacts will be protected.
- Land use regulations will be used to protect natural resources from insensitive development.

## Making things better

In its simplest form, the purpose of this plan is to make the Johnson Creek watershed a better place to live—for you, your family and the wildlife that call the area home. By protecting the environment and reducing the flood hazard while still allowing responsible development, the watershed will attract new residents and visitors. This will, in turn, increase the value of area property, and the patronage of local businesses. New jobs may be created, and as tax revenues increase, cities and counties will have more money to spend on local services and much-needed capital improvements.

By reducing the risk of floods, hundreds of local homes and businesses will see lower flood insurance premiums, lower damage costs and improved public safety. Actions designed to improve water quality and enhance fish and wildlife habitat are likely to show positive changes within a few years of implementation. Recreational benefits will also increase dramatically.

## Putting our money where our creek is

Changes this sweeping call for long-term investments to be made. Most of the direct costs will be borne by the public sector—through city, county and other government agencies. The estimated cost of the plan is \$16 million. All but a small portion of that goes towards major capital improvements, such as storm treatment facilities and flood detention basins. Once the plan is up and running, an estimated annual budget of \$300,000 will be needed to operate the Watershed Management Organization and maintain planned watershed facilities.

Since enhancing such a significant watershed is important to the community as a whole, it is hoped that corporate sponsors might also be willing to help. There are also a number of private foundations that offer grants for environmental improvement projects. The Watershed Management Organization will establish a non-profit corporation to help solicit funds from corporations, foundations and other private parties.

*When you have seen one ant, one bird, one tree, you  
have not seen them all*

—Edward O Wilson

1. The Confluence and McBrood Bottom



2. The Canyon



3. Bell Station



4. I-205 Connection



5. The Mills



6. The Gardens



7. Powell Butte Valley



8. Gresham Greenbelt



9. Upper Creek





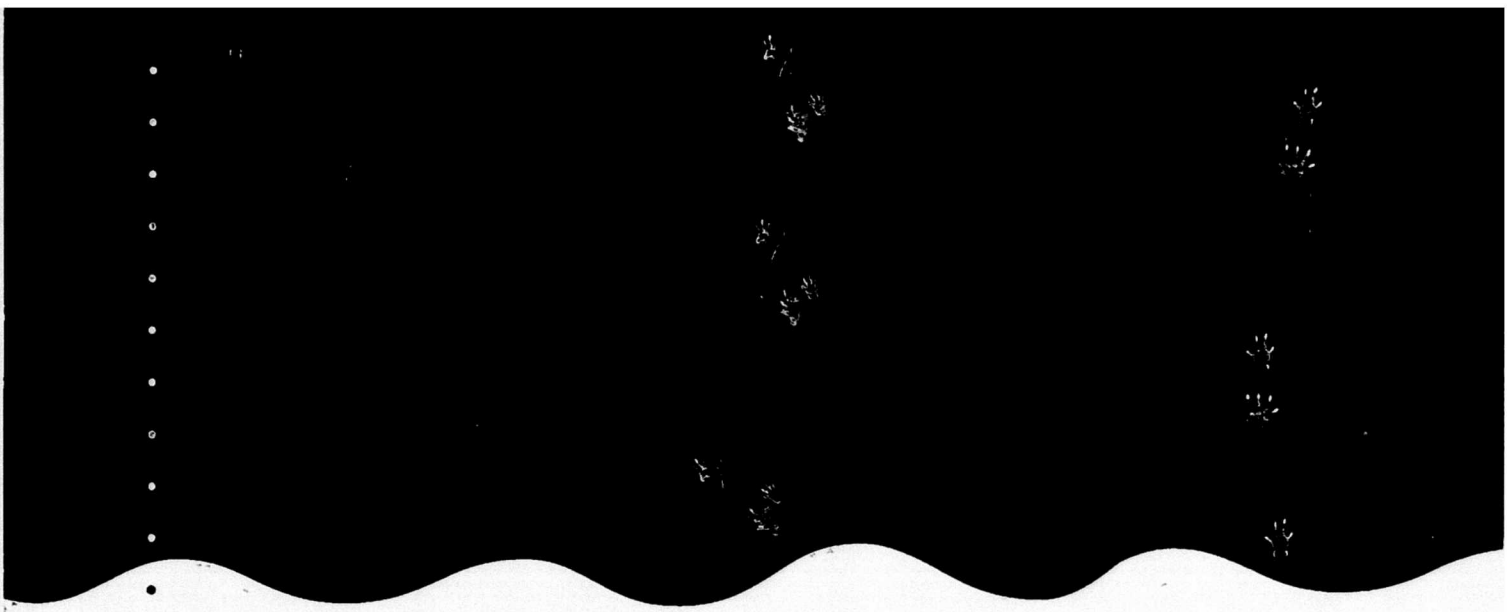
# Proposed Improvements by Creek Reach



Johnson Creek can be divided into nine main sections, or "reaches". Each reach encompasses a well-defined, continuous stretch of the creek. These reaches share many things in common, but are distinct from one another in their make-up and

surroundings—much like a city can be divided into specific neighborhoods. The following chart shows you the general improvements currently planned for each Johnson Creek reach

Reaches	Improvements						
	Water Quality Improvement Facility	Wildlife Habitat Restoration	In-Stream Fish Habitat Improvement	Cultural Resource Exhibit	Off-Stream Fish Refuges	Recreational Improvements	Flood Reduction Facilities
1. The Confluence and McBrod Bottom	☞	☞	☞				
2. The Canyon	☞	☞		☞	☞	☞	
3. Bell Station	☞	☞					
4. I-205 Connection	☞	☞					
5. The Mills	☞	☞				☞	☞
6. The Gardens		☞					
7. Powell Butte Valley		☞					☞
8. Gresham Greenbelt	☞	☞					☞
9. Upper Creek			☞				☞





ENVIRONMENTAL SERVICES  
CITY OF PORTLAND  
**CLEAN RIVER WORKS**

Mike Lindberg, Commissioner  
1120 SW Fifth Avenue, Room 400  
Portland, Oregon 97204

RESOLUTION NO **35414**

Endorse and support the Johnson Creek Watershed Council and the guidance offered by the multi-objective, watershed-wide Johnson Creek Resources Management Plan. (RESOLUTION)

WHEREAS, the City has been an active partner with the Johnson Creek Corridor Committee in developing the Johnson Creek Resources Management Plan,

WHEREAS, the Johnson Creek Corridor Committee has been renamed the Johnson Creek Watershed Council (JCWC) to more accurately reflect its multi-objective, watershed-wide perspective,

WHEREAS, the JCWC is an organization composed of representatives from city and county governments, regulatory agencies, concerned citizens, community groups, and other watershed interests having a stake in Johnson Creek,

WHEREAS, participation in the JCWC provides advocacy for and coordination of ecosystem protection, restoration, and watershed management that integrates landscape ecology, protection of open space, wildlife refuge parks, crop lands, economic development and the enhancement of water quality,

WHEREAS, the goals of the JCWC and the Johnson Creek Resources Management Plan are to reduce flooding, improve water-quality, improve the human environment, and preserve and protect natural resources in the Johnson Creek watershed,

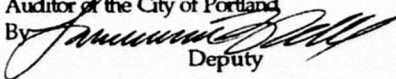
WHEREAS, the Bureau of Environmental Services has developed goals and objectives to protect natural waterways and water quality and provide stormwater management services,

WHEREAS, the JCWC input, advice and advocacy will be invaluable in implementing the resource management plan for the watershed by providing mechanisms for citizens to communicate with governmental agencies, and fostering partnerships for action between people and their governments,

NOW, THEREFORE, BE IT RESOLVED that

- a The Council of the City of Portland endorses and supports the Johnson Creek Watershed Council and its efforts in implementing watershed restoration guided by the multi-objective Johnson Creek Resources Management Plan,
- b The Bureau of Environmental Services will take the lead for the City of Portland in assisting the Johnson Creek Watershed Council with the development of strategies for implementing watershed restoration using the guidance offered in the Johnson Creek Resources Management Plan.

Adopted by the Council, **JUN 28 1995**  
Commissioner Mike Lindberg  
Cathryn Collis  
June 20, 1995

BARBARA CLARK  
Auditor of the City of Portland  
By   
Deputy

= 1026

Agenda No

10 AM

# RESOLUTION NO 35414

Title

Endorse and support the Johnson Creek Watershed Council and the guidance offered by the multi-objective, watershed-wide Johnson Creek Resources Management Plan (RESOLUTION)

INTRODUCED BY	Filed <b>JUN 23 1995</b>
Commissioner Mike Lindberg	Barbara Clark Auditor of the City of Portland
NOTED BY COMMISSIONER	
Affairs	By <u>Britta Olsar</u> Deputy
Finance and Administration	For Meeting of _____
Safety	ACTION TAKEN
Utilities <u>MDJ / JLD</u>	
Works	
BUREAU APPROVAL	
Bureau Environmental Services	
Prepared by      Date Cathryn Collis      6/20/95	
Budget Impact Review ___ Completed <u>OC</u> <input checked="" type="checkbox"/> Not Required	
Bureau Head <u>DCM</u> Dean C Marriott, Director	

AGENDA		FOUR-FIFTHS AGENDA	COMMISSIONERS VOTED AS FOLLOWS	
			YEAS	NAYS
Consent	Regular XX	Blumenauer	_____	
NOTED BY		Hales	✓	
City Attorney		Kafoury	✓	
City Auditor		Lindberg	✓	
City Engineer		Katz	✓	