

# **Environmental Education Priorities for EPA Region 10**

**CRITICAL NEEDS IN ENVIRONMENTAL EDUCATION  
EPA REGION 10  
SPRING 1991**

**PURPOSE**

The purpose of implementing a needs assessment in environmental education was to determine: (1) What do educators, citizens and administrators see as the most significant needs in environmental education and (2) What direction and role should EPA take in supporting and enhancing environmental education.

**PROCESS**

Public meetings were held in Portland, Boise and Spokane. At each meeting the group was divided into small groups (3-4). Each group was asked the question: "If you could only fund one large (+ \$50,000) environmental education project, what would it be?" and "If you could only fund one small environmental education project (-\$5,000) what would it be?"

After 30 minutes of brainstorming/discussion, each group reported out their response. All responses were discussed and written on a flip chart. After all reports, each participant was given five "dots" with which to vote for their favorite project. All dots could go to one project or be spread throughout the list.

**PARTICIPANTS**

56 people attended the meetings. Participants included teachers, educational administrators, federal, state, and local resource agency staff, professors, university administrators, and citizen activists.

**SUMMARY COMMENT**

It was significant that each group, without knowing what other groups had determined, defined the need for an environmental education clearing house as the most critical need. There was also a high level of agreement on other needs. The attached report has a complete description of the needs in priority order.

# **SIGNIFICANT ENVIRONMENTAL EDUCATION NEEDS**

## **CLEARING HOUSE - RESOURCE CENTER**

### **Purpose**

Prevent duplication and re-invention

Access to most current information by all

easily accessible (1-800-#)

### **For educators and citizens**

#### **All Information on existing environmental education resources including**

existing environmental education resources

good curriculum

Where available

for what grades

who sponsors

how integrated

cost

grants and scholarships which are available

interested citizen groups

publications/library

issue information

contacts for information

## **EXHIBITS AND MOBILE DISPLAYS**

### **Purpose**

Take state of art education to schools

Available to citizens and schools

To focus on one environmental aspect in detail e.g. riparian areas, watersheds, streams, groundwater or lakes

Move people from awareness to appreciation to action

**Build educational program for students, parents, teachers and community leaders**

Special emphasis for low soci-economic levels

**Be focused on issue of local interest**

**Create the environment as it should be**

**In depth related to what students have learned**

## **A UNIFIED AND EVALUATED CURRICULUM**

**Purpose**

Take existing curriculum and create a central framework curriculum from which all disciplines can emerge: "wellspring"

Develop a coherent continuous k-12 curriculum

**Evaluate materials and curriculum**

**Demonstrate relationships at all levels**

**Consolidate current materials and then train teachers**

## **A COMMUNITY BASED ENVIRONMENTAL EDUCATION PROGRAM**

**Purpose**

To have students, teachers and citizens involved with the same project.

To link volunteers, with schools and resource agencies

Provide support to teachers and educators in environmental education efforts

**Focus on an issue which affects all the community**

**Has potential to solve environmental problems**

Take materials learned, address problem and take action

**Be sure to include labor and industry**

**Trains students and citizens to think environmentally**

## **APPENDIX 8**

# **LONG-TERM WATER QUALITY MONITORING PLAN**

## **Long-term Water Quality Monitoring Plan Percival Creek basin**

By tracking water quality trends over the long-term, the water quality monitoring plan will play a critical role in protecting and improving of Percival Creek's chemical and biological integrity. Implementation of the monitoring plan will enable local governments and interested groups or individuals to:

- Detect and correct water quality problems.
- Identify trends in the water quality thereby assessing the success of corrective actions.

Water quality investigations conducted during the basin planning effort focused on identifying nonpoint pollution sources within the basin. Types of nonpoint pollutants include sediments, pathogens, nutrients, and toxicants. These pollution sources, spread throughout the basin, have resulted in considerable water quality impacts to the creek system.

### **Current Water Quality Conditions**

Initial monitoring, conducted from 1989 through 1991, indicates Percival Creek has several water quality problems. Specific types of pollution identified during the initial monitoring include the following:

- Elevated fecal coliform levels in the areas of the Cooper Point overpass, Trospen Road, and the Black Lake drainage ditch.
- Elevated turbidity levels in the Black Lake drainage ditch and at the mouth of Percival Creek.
- Elevated mercury and phthalate levels at the outlet of Black Lake.
- Elevated levels of organic compounds and metals at the Yauger Park outlet on Cooper Point Road.

During 1989-1990, creek sediments were analyzed for EPA priority pollutants at six stations in the basin. Sampling detected semi-volatile extractables, particularly polynuclear aromatic hydrocarbons, at all sampling sites. Additionally, the sediment analysis identified mercury, zinc, lead, and arsenic concentrations slightly in excess of currently used comparison data (Wisconsin Department of Natural Resources, 1985). These trace metals have a variety of potential sources including households, business, and motor vehicles.

### **Water Quality Monitoring Plan**

The Washington Department of Ecology (DOE) has established guidelines for long-term water quality monitoring (Guidance for Conducting Water Quality Assessments, June, 1989). The monitoring program presented in the DOE guidelines seeks to maximize the value of the information collected while

minimizing costs and technical complexity. The guidelines recommend the following elements for a successful long-term monitoring program:

- High flow monitoring to evaluate pollutant loading during worst-case conditions
- Monitoring for select parameters at predetermined time intervals.

The proposed monitoring program will concentrate sampling efforts during the wet season when the majority of the pollutant load enters the creek. With this in mind, a minimum of four sampling events will occur during the time period of November through April. Additionally, one or two sampling events will be scheduled for the late summer dry period when stormwater runoff related, non-point pollutant loads are minimal.

Water column monitoring stations will be a permanent feature of the sampling program thereby providing long-term trend data. The upstream stations will accommodate corrections for background, seasonal, and flow-related variations. The water column sampling parameters will include the follows:

- Flow
- Fecal coliform
- Total suspended solids (TSS)
- Turbidity
- Conductivity
- Dissolved oxygen
- Temperature
- pH

Flow, turbidity, conductivity, dissolved oxygen, temperature, and pH will be taken at the time of sampling using field equipment. Creek flows will be obtained at the time of sampling in order to determine pollutant loadings.

Three continuous reading staff gauges are operated by Thurston County in the creek system. Two of the gauges are located on the Black Lake drainage ditch at the outlet of Black Lake and at Mottman Road. The third gauge is located on Percival Creek at Mottman Road. The data generated by these gauges will augment the flow data collected during sampling events.

Sediments at the mouth of the creek will be sampled once every five years in order to evaluate the impact of long-term chronic pollutant levels that can not be detected in water column samples. Sampling will occur during late summer after yearly depositional settling has occurred. Sediments will be sampled for the following parameters:

- Particle size
- Total solids
- Total organic carbon (TOC)
- Metals (mercury, lead, zinc, arsenic, chromium)
- Semi-volatile organic compounds
- Total petroleum hydrocarbons
- Polycyclic aromatic hydrocarbons

Local governments with jurisdictions within Percival Creek basin will meet annually to assess the quality of the creek and discuss the effect of any changes occurring or proposed in the basin. A report of the annual sampling results will be made available to interested parties on June 30 of each year. This information will enable local governments to assess the effect of policy and land use decisions and compare the quality of Percival Creek with the other creek in the Puget Sound region.

### **Sample Site Locations**

Sample site locations were selected based on distribution in the creek system and technical acceptability for successful sampling.

<b>Station</b>	<b>Location</b>	<b>Parameter</b>	<b>Monitoring emphasis</b>
<b>P-1</b>	Percival Cove	Water column, sediments	Mouth station
<b>P-3</b>	Percival at Mottman Road	Water column	Staff gauge site
<b>P-6</b>	Black Lake Ditch at Mottman Road	Water column	Mouth of Black Lake ditch, staff gage site
<b>P-5</b>	Percival at Trosper Road	Water column	Headwaters of Percival Creek
<b>P-8</b>	Black Lake outlet	Water column, sediments	Headwater of Black Lake ditch, mercury in sediments and water column, staff gage site
<b>P-10</b>	Cooper Point Road Ditch	Water column, sediments	Yauger Park outlet
<b>P-11</b>	Outlet of Ken Lake	Water column	Nutrient inputs from Ken Lake



## ANALYTICAL METHODS

EPA contract Laboratory Program (CLP) has established requirements for sample holding times, matrix spikes, matrix spike duplicates, surrogate compound recoveries and method blanks. All analyses conform to EPA protocols.

WATER COLUMN		
PARAMETER	COSTS <sup>4</sup> PER SAMPLE	ANALYTICAL METHOD
Fecal coliform organisms	\$ 15.00	Standard Methods 909c
Total suspended solids	\$ 10.00	EPA 160.2
Mercury (water column)	\$ 22.00	EPA 200.7
SEDIMENTS		
Total solids	\$ 10.00	EPA 160.3
Particle size	\$ 75.00	PSP <sup>5</sup> EPA CE/81-1
Total organic carbon (TOC)	\$ 30.00	EPA 415.1
Metals	\$ 30.00	EPA 245.1 EPA 200.7
Total petroleum hydrocarbons	\$ 50.00	EPA 8100 (GC/FID)
Semi-volatile organic compounds	\$ 475.00 <sup>6</sup>	EPA 625/8270

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<sup>4</sup> 1991 Costs

<sup>5</sup> Puget Sound Protocols

<sup>6</sup> A/BN EPA 625-Semi-volatile Organic Compounds

## FIRST YEAR IMPLEMENTATION COSTS

### Staff hours:

13.5 sampling days per year x 8 hour days x 25.00 per hour	= \$ 2700.00
Shipping - 50.00 per shipment x 7 shipments	= 350.00
<i>Sub-total</i>	= \$ 3050.00

### Water Column Sample Analysis Costs:

Fecal Coliform Analysis - 7 stations (plus one) x 15.00 per sample	= \$ 120.00
Total Suspended Solids - 7 stations (plus one) x 10.00 per sample	= 80.00
Mercury (site P-8)	= 20.00
	x 5
<i>Sub-total</i>	= \$ 1100.00

### Sediment Analysis Costs:

Particle Size - 3 stations (plus one) x 75.00 per sample	= \$ 300.00
Total Solids - 3 stations (plus one) x 10.00 per sample	= 40.00
Total Organic Carbon - 3 stations (plus one) x 30.00 per sample	= 120.00
Metals - 3 stations (plus one) x 30.00 per sample	= 120.00
Semi-Volatile Organics - 3 samples (plus one) x 475.00 per sample	= 1900.00
Total Petroleum Hydrocarbons - 3 samples (plus one) x 50.00 per sample	= 200.00
<i>Sub-total</i>	= \$2680.00

*Total Cost* = \$6830.00

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## **APPENDIX 9**

# **WATER RESOURCES REGULATIONS**

## **WATER RESOURCES REGULATIONS, GUIDELINES, AND MANAGEMENT OPTIONS**

Water resources are diverse and require a number of distinct management tools. Two basic methods are used to manage storm and surface water: regulatory and non-regulatory.

Regulatory means of storm and surface water management are used to guide or, in many cases, limit the types of activities that can take place in the vicinity of streams, wetlands, shorelines, and other sensitive areas. Federal, state and local governments administer a variety of regulations directed at protecting sensitive areas. A brief summary of the primary regulations pertaining to storm and surface water follows.

Non-regulatory management tools rely on less traditional methods to protect critical areas. They also utilize such methods as land donations or easements, public involvement and education, technical assistance, and purchase of development rights. A summary of these management methods follows the discussion regulations.

### **FEDERAL PROGRAMS:**

#### **National Pollutant Discharge Elimination System Permit (NPDES)**

Under the authority of the U.S. Environmental Protection Agency (EPA), the Washington Department of Ecology regulates point source pollution discharges into receiving waters of the state through NPDES permits. New regulations aimed at reducing non-point source pollution will also be administered through the NPDES program. Since November, 1991, 220 cities and counties in the U.S. are required to apply for the first of a two-part discharge permit. Stormwater discharge regulations apply to urban areas with populations of 100,000 or more. All other urban areas will be required to comply with NPDES regulations in the future. Stormwater discharges from small communities such as Olympia will not be regulated until 1993 or beyond. Projects and planning concerning stormwater should take into account future discharge regulations.

#### **National Flood Insurance Program**

The Federal Insurance Administration within the Federal Emergency Management Agency (FEMA) oversees the National Flood Insurance Program. The program subsidizes flood insurance for communities with approved flood management policies. Maps delineating the 100 year floodplain and floodway are provided to member communities. Local governments are responsible for controlling development in these

## Section 401 - Clean Water Act

The U.S. Army Corp of Engineers is responsible for the administration of Section 401 of the Clean Water Act. Section 401 addresses the suitability of placing fill materials in waters of the United States. These waters include tributaries adjacent to navigable waters, and wetlands not associated with a stream or tributary.

### **TRIBAL PROGRAMS:**

#### Squaxin Island Tribe Treaty Rights

Activities proposed for nontribal lands and resources, but that affect treaty-reserved rights guaranteed by the Medicine Creek Treaty are subject to tribal oversight. Percival Creek basin is within the jurisdiction of the Squaxin Island Tribe. Any streamside activity potentially influencing water quality, salmon species and habitat must be approved by the Tribe. Mitigation of adverse effects may be demanded by the tribe.

### **STATE PROGRAMS:**

#### Growth Management Act (Engrossed Substitute House Bill 2929)

The Growth Management Act (ESHB 2929) was passed in 1990 in an effort to plan for the continued growth of Washington State. It prescribes a series of activities commencing with the adoption of guidelines by the Department of Community Development. Every county in the state with a minimum population of 50,000 and a growth rate of 10% or a population increase of 20% over the last decade is required to designate agricultural, forest, and mineral resource lands. Counties must also adopt development regulations to assure conservation of critical areas including wetlands, aquifer recharge areas, fish and wildlife habitat, frequently flooded areas, and geologically hazardous areas.

In addition, all cities and counties are required to have comprehensive plans and compatible zoning ordinances. The act allows for the collection of interim impact fees from new developments for public facility improvements, and has changed the standard of local government review for subdivisions. The bill also encourages rural communities to improve local capacity for growth through grant funded programs.

### Urban Growth Management Agreement (UGM), 1988

The Urban Growth Management agreement was first signed in 1983 by Thurston County, Lacey, Olympia, and Tumwater, and later renewed in 1988. The UGM agreement establishes short- and long-term urban growth boundaries in which the parties agree to cooperate in land use planning and the provision of public services. The agreement is intended to guide the actions of each jurisdiction as well as phase urban growth and the development of public facilities and expansion of services. Rather than attempting to force a uniform development design for the region, the agreement supports diversity and choice in style and approach.

The UGM agreement is an attempt to generate guidelines for orderly growth in the rapidly expanding South Sound region. The agreement recognizes desirable growth patterns will result from improved communication between the jurisdictions, comprehensive planning, as well as similar standards and regulations between the four jurisdictions.

The primary goals of the UGM agreement are concentration of urban development in planned urban areas, provision of high quality public services at a low cost, and maintenance and protection of significant natural resource lands, agriculture, environmentally sensitive areas, and groundwater.

The majority of the Percival Creek basin is currently included in the short-term urban growth boundary. The western border of the basin lies outside the short-term boundary, but an additional part of the western boundary will be included in the the long-term boundary.

### Engrossed Substitute House Bill 5411

House Bill 5411 was passed by the Washington State Legislature on May 21, 1991. The bill, sponsored by the Senate Committee on Agriculture and Water Resources, is primarily concerned with the alleviation of flood damage. The November flooding of 1990 provided the impetus for the drafting of the bill which intends to "develop a coordinated and comprehensive state policy to address the problems of flooding and the minimization of flood damage" (ESHB-5411, Section 1.3).

The bill allows any county legislative authority to adopt a comprehensive flood control management plan for drainage basins located entirely or partially within its jurisdiction. Such a plan must "establish restrictions on land clearing activities and development practices that exacerbate flood problems by increasing the flow or accumulation of flood waters, or the intensity of drainage, on low lying areas" (ESHB-5411, Section 3.5). These restrictions exclude forest practices. The bill also creates a joint select committee on state flood damage reduction which is responsible for consideration of the formation of

"comprehensive state flood policies and a comprehensive and coordinated flood damage reduction plan" (ESHB-5411, Section 15.5). This plan would include, among other items, "stormwater runoff pattern alterations and accompanying liabilities, including an analysis of: a) increases in peak flows caused by inadequate stormwater planning and controls; b) the need for minimum standards for land use development activities employing natural watercourses for stormwater conveyance; and c) the need for a statutory cause of action to provide a remedy for downstream property owners who are damaged by accelerated stormwater runoff caused by cumulative upstream activities, including a modification of the court-adopted 'common enemy' doctrine" (ESHB-5411, Section 15.5).

### State Environmental Policy Act (SEPA)

The Washington State Environmental Policy Act (SEPA) provides a process whereby environmental concerns are addressed during the local permitting of projects. The disclosure of information pertaining to significant adverse environmental effects of a proposed project is required. Methods to mitigate any significant effects are addressed during review of the SEPA checklist which is required for all nonexempt projects. The SEPA process must be completed prior to issuance of Hydraulic Permit Approvals, Shoreline Substantial Development permits, and applicable local permits. If the SEPA process indicates that a significant adverse effect is likely, an Environmental Impact Statement (EIS) will be required for the project.

### Freshwater Sediment Regulations

Recently the Washington State Department of Ecology (WDOE) adopted the Sediment Management Standards rule, Chapter 173-204 WAC. The rule establishes specific chemical and biological criteria as well as narrative standards to designate and protect the quality of all sediments in Washington. The rule also establishes procedures to limit the amount of contaminants entering waterbodies and to clean up existing sediment contamination. The rule currently pertains to chemical and biological contamination in Puget Sound only. Until sediment criteria are developed for the state's other marine waters, estuaries, and freshwaters, the rule's narrative standard of "no acute or chronic adverse effects and no significant human health risk" allows for case-by-case determination of criteria.

Currently, the WDOE is developing and compiling background technical data necessary to establish freshwater sediment criteria. Unanswered questions concerning problem chemicals; effective sampling, testing and interpretation guidelines; and interpretation of the conditions in freshwater benthic communities of different water bodies need to be answered before the criteria are finalized.



## Washington's Surface Water Quality Standards

The WDOE has proposed several changes to Washington's Surface Water Quality Standards. Changes concerning antidegradation of wetlands will have the most profound impact on storm and surface water management in Olympia. The proposed changes will be made to Chapter 173-203 WAC.

Specifically, under WAC 173-203-030 "General water use and criteria classes" surface water resources are identified and classified. For Class 6, wetland class, an antidegradation regulation is proposed that would prohibit human-influenced activities which raise fecal coliform levels above natural conditions. Other aspects of the antidegradation rule would also impact stormwater management by requiring that natural hydrologic and substrate conditions within a wetland be maintained so as to preserve the natural water temperature of wetlands and cause no alteration of natural vegetation patterns.

## Puget Sound Water Quality Authority Management Plan

The 1991 Puget Sound Water Quality Authority Management Plan requirements form the foundation of the stormwater program being established by the Department of Ecology. The plan was first adopted in 1987 and has been updated several times since. The Puget Sound Plan and WDOE's stormwater program apply to the cities and counties within the Puget Sound basin as well as the Washington State Department of Transportation (WSDOT).

The Puget Sound Plan sets forth a local stormwater program that encompasses the basic requirements for all counties and cities. Rules adopted to implement the program will establish minimum standards for program components including: operation and maintenance of new and existing stormwater facilities; drainage, clearing and grading, erosion and sediment control, and protection of surface and groundwater requirements applicable to all new development and redevelopment; maintenance requirements for all privately owned facilities; and record keeping of all new facilities. All urbanized areas are to begin implementing their program by 2000. All the rules needed to implement the program should be adopted by early 1992.

The program also developed a technical manual, *The Stormwater Management Manual for the Puget Sound Basin*, which provides guidance to local governments for the implementation of their stormwater program. The manual emphasizes source control BMPs as the first and most cost effective method of eliminating or reducing pollution of stormwater. The manual also provides guidance on how to prepare and implement stormwater management plans, including erosion and sediment control plans. The stormwater management plans developed as a result of using the technical manual are in no way a substitute for a comprehensive drainage plan. The manual also is intended to

be used when retrofitting BMPs to existing development and as a reference source for the preparation of technical bulletins, leaflets, and brochures for education or specialized BMP implementation.

The plan also establishes a Puget Sound Highway Runoff Program. This program has been developed to control the quality of runoff from state highways in the Puget Sound basin. WSDOT is required to use the above mentioned technical manual for guidance in managing highway runoff, adopt a highway vegetation management program, include BMP's in the construction of new projects, inventory and retrofit state highways with water quality BMPs where practicable, monitor where practicable, and submit biannual reports to DOE. This program became effective on June 21, 1991.

### Washington State Hydraulic Code

The Washington State Hydraulic Code mandates review of proposed projects that would affect both salt and fresh waters, and their associated habitat. All projects involving modifications to creeks or their stream banks require a Hydraulic Permit Approval (HPA). The protection of salmonid species and associated habitat is the primary concern of the review process. The Washington Departments of Fisheries and Wildlife administer the code.

### Washington State Shoreline Management Act

The Washington State Shoreline Management Act (SMA) seeks to protect water, fish, wildlife, and habitat resources in shoreline areas. Shorelines are defined to include lakes and reservoirs of 20 or more acres, streams with a mean annual flow of at least 20 cubic feet per second, marine waters including an area 200 feet inland from the mean high-water level, and all associated wetlands, floodplains, and floodways. The act excludes wetlands not associated with waters of the State including isolated wetlands and riparian wetlands associated with water bodies smaller than the above requirements. It also exempts most agricultural and forest practices from permit requirements.

The SMA is similar to a combined comprehensive plan and zoning code. It not only contains policies, but also includes specific performance standards and regulations. The SMA uses a permitting process to regulate shoreline activities. A Shoreline Permit is required for any development or construction valued over \$2,500 located on or near the water. Compliance with permits is required in addition to compliance with the SMA regulations. Thus, even if a person does not have to obtain a permit for a project, the project must still comply with the SMA regulations. The Act identifies activities that are inconsistent with shoreline protection and provides guidance to local jurisdictions developing local shoreline plans. The SMA requires that local government's develop their own Shoreline Master Program (SMP).

### Washington Coastal Zone Management (CZM) Program

Projects authorized by the U.S. Army Corp of Engineers and other federally permitted projects require certification assuring their compatibility with state and local environmental regulations. The Department of Ecology administers the certification process in the State of Washington.

### Washington Department of Fisheries Stormwater Management Guidelines

In November of 1990 the Washington Department of Fisheries (WDF) implemented new stormwater management guidelines which focus on stormwater controls that protect fish habitat and fish resources. Because these are guidelines, in the case of a conflict with established regulations, the regulations would prevail.

Recommendations made in the guidelines include limiting peak discharges from the 2 and 25 year storm, using infiltration of stormwater wherever possible to recharge groundwater and protect base flows, dominant discharge in the stream channel should be preserved through detention and infiltration of stormwater, and use of sedimentation ponds and erosion control practices to reduce pollutants in streams.

WDF offers regulatory protection of habitat through their authority to administer and enforce Hydraulic Project Approval permits.

### Governor Executive Orders 89-10 and 90-04

These executive orders were issued by Governor Booth Gardner to order state departments to work within existing policies and programs to achieve "no net loss" of wetlands. The orders also direct state agencies to exercise existing authority to the maximum extent possible to condition, deny, or enforce actions that may affect wetlands.

### **LOCAL PROGRAMS:**

#### *The Drainage Design and Erosion Control Manual for the Thurston Region, Washington* (Drainage Manual)

The cities of Olympia, Lacey, and Tumwater have developed a comprehensive approach to managing stormwater through the use of a region-wide drainage manual. This manual is intended to provide consistent standards and procedures for preparing drainage plans throughout the region while at the same time allowing for site-specific alterations by the jurisdictions. All of the jurisdictions listed above have adopted the manual and require its use when designing stormwater facilities for new development.

### City of Olympia Comprehensive Plan

The City of Olympia Comprehensive Plan (1988) cover the issue of stormwater in considerable length. The plan calls for increased stormwater management planning to minimize the impacts of urbanization on water quality in wetlands, streams, lakes and Puget Sound. Several goals relating to storm and surface water management are identified by the plan including implementing a stormwater facility, minimization of runoff generated by new development, maintenance of lakes, ponds, wetlands, and streams in their natural condition, protection of streams from high flows and water quality degradation, and preservation of natural vegetation on development sites.

### Thurston County Comprehensive Plan

Thurston County has jurisdiction over the outlying areas in the Percival Creek basin. The plan identifies basin planning as an integral part of Thurston County's stormwater management program. According to the Comprehensive Plan the protection of water resources in the county is to be accomplished by viewing all surface water bodies as part of a connected system instead of as isolated units, protection of fish-bearing streams from development impacts, restoration of degraded systems, maintaining the natural condition of water bodies, and increasing the evaluation of natural resources within the county and implementing the necessary changes to correct existing problems.

In contrast to the predecessors of the comprehensive plans of both Olympia and Thurston County the policies concerning surface water and the natural environment show a clear dedication to preserving streams and wetlands, views and wildlife habitat in their native forms. In addition, both plans dictate stronger limitations on development in unsuitable areas.

### City of Tumwater Comprehensive Plan

The City of Tumwater Plan, updated in 1984, establishes a framework for planning decisions, and can be used for the development of appropriate new plans, regulations, and land uses. *The Plan* is designed to guide future development in a desirable and efficient manner, by providing a basis for public decisions regarding the development of community resources, the expenditure of public funds, and the allocation of land for various purposes. *The Plan* is somewhat outdated, however, and does not adequately address issues relating to the protection of natural resources. This deficiency is compensated by the newly adopted Tumwater Environmentally Sensitive Areas Conservation Plan discussed below.

### *Tumwater Environmentally Sensitive Areas Conservation Plan*

The City of Tumwater has developed an Environmentally Sensitive Areas Conservation Plan in order to meet the requirements of the Growth Management Act (SHB-2929). The conservation plan is intended to identify, protect, and conserve critical environmental areas and valuable natural resources. Companion ordinances are included in the document in order to facilitate its rapid adoption. SHB 2929 requires completion and adoption of such conservation plans by September 1, 1991.

The Plan identifies Tumwater's economically viable areas including agricultural lands, forest lands, and mineral resource lands. It also identifies critical areas including wetlands, aquifer recharge areas, frequently flooded areas, geologically hazardous areas, and fish and wildlife habitat areas. Policies for the use and protection of these areas are included in the plan. The Tumwater City Council adopted the plan on August 20, 1991.

### Development Permitting Process

The development of new structures and modifications to existing structures requires local review and permitting. Water resource concerns that are addressed during the review process include zoning, proximity to sensitive areas, sewage disposal, drainage management, site design, and open space.

### Zoning Ordinances

Zoning ordinances are a means to promote the health, safety, and general welfare of a community through providing development guidance. Zoning also provides regulations and objectives that encourage high development standards, prevent the overcrowding of land, and avoid excessive population concentrations. Stormwater issues are addressed by zoning ordinances through provisions for stream buffers, habitat, accepted uses, and best management practices for stream corridors. The City of Olympia and Thurston County Zoning Ordinances include a mandatory stormwater control plan for all building permits except single family and duplex permits.

Zoning ordinances in Olympia and Thurston County also restrict the types of activities that may take place in flood hazard areas, wetlands, geological hazard areas and other critical areas.

## **NONREGULATORY MANAGEMENT OPTIONS**

There are a number of nonregulatory options available for management of water resources. These options lack a regulatory mandate and are instead characterized by their voluntary nature. Because these options are noncompulsory, in most cases they must be implemented as individual programs based on the willingness of private citizens to participate.

### **Conservation Easements**

Private landowners who wish to preserve the natural state of their property while maintaining ownership may choose to donate their development rights to a qualified conservation organization. Any property with significant conservation or historical value can be protected in this way. The conservation organization then holds the development rights and manages the property under its objectives. If the property owner grants the development rights in perpetuity to a qualified organization, the donation is considered a tax deductible charitable gift and can be deducted from the owner's income tax.

### **Purchase of Development Rights**

Like conservation easements, this option involves the relinquishment of development rights. In this case, however, the rights are purchased from the property owner instead of being donated. This removes the land from the development market while allowing the owner to continue the current use of the property. Once the development rights have been purchased the information is listed on the property title and is binding on all future owners. This is an especially common practice for agricultural lands because it protects them from subdivision and development while allowing their existing use to continue into the future.

### **Land Trusts**

Land trusts are organizations set up to protect property with special value. Trusts rely predominantly on donations of land, but occasionally purchase property they consider especially valuable. Scenic views, wildlife habitat, unique natural features, and sensitive or threatened environments are common features of lands protected by trusts. Most trusts are local and run predominantly by volunteers. Some trusts are set up to manage lands on a permanent basis while others purchase lands and hold them only until a public entity is able to purchase the land.

Trusts manage the lands they acquire according to the wishes of the donating landowner and according to their own objectives. The primary goal of most trusts is to acquire land

for public recreation. Secondary goals usually include protection of habitat, flood plains, and water quality.

The Capitol Land Trust, the Olympia-Tumwater Foundation, and the Nisqually River Basin Land Trust are the primary land trusts in the Olympia area. These organizations protect land by accepting donations of conservation easements, actual property, or money. Purchase of especially valuable property with donated funds is used by these entities when possible. On a national scale the Trust for Public Lands is a non-profit organization that purchases and accepts donations of land on a short-term basis. They hold these lands until public entities are able to purchase the areas. They also work with communities to set up local land trusts. Their primary focus is on lands that contain important habitat and can be used for recreation, education, or research.

### Open Space

Parks and open space contribute to a high quality of life in urban environments. Buffers of open space can lessen the impact of conflicting land uses, as well as provide a natural area for recreation and wildlife habitat. Open space is made up of more than parks and recreation areas. It can be a secondary result of agricultural practices, wetland and stream bank protection, restricted flood plain development, and preservation of vegetative cover on steep banks and unstable soils.

In 1970 the Washington State Legislature adopted the "Open Space Tax Act." This act allows for lands to be assessed at current use value rather than highest and best use, protecting land owners from high property taxes that could force them to convert their valuable undeveloped urban property to other uses. This tax break provides an incentive to retain undeveloped urban lands as open space.

Open space tax programs are intended to continue private ownership and compensate property owners retaining current use as undeveloped property. The Open Space Tax Act identifies two categories of lands that meet the criteria for open space. The first category includes any land that is designated as open space by a city or county comprehensive plan and is zoned as such. The second classification category covers any land area whose preservation would protect natural, scenic, or cultural resources, stream corridors, wetlands, natural shorelines, aquifers, soil resources, or unique critical wildlife and native plant habitat.

### Technical Assistance

Technical assistance can be used to improve or build a stewardship ethic among communities experiencing water related problems. This method is inexpensive and a relatively easy management option to implement. Technical assistance involves staff

people in the field who locate and assess problems. Field representatives can also help residents interpret technical plans, and provide personal expertise, as well as assist in locating other available resources to help alleviate problems. While in the field they can provide technical manuals and information, brochures, or guidebooks relevant to the specific needs of each situation.

### Public Education

One of the most effective ways to change people's undesirable behaviors is to increase their awareness and understanding of the issues involved. The protection of water resources will require that people understand the impacts on water quality of many daily activities. Public education provides general information to a wide population over a long period of time. While results are not always tangible, it is a very effective process for improving the quality of water resources. Public education often builds a community support group which can help by volunteering to help with improvement projects and by sharing their knowledge with others. Residents who are alert to the issues associated with creeks, shorelines, flood plains, and other water related issues will be better able to anticipate and respond to potentially dangerous situations.



## **APPENDIX 10**

## **GLOSSARY**

## **Glossary**

**AESTHETIC AMENITIES** - Relating to the increase in the beauty of an area.

**ANADROMOUS** - Fishes, such as salmon and sea-run trout, that live part or the majority of their lives in salt water but return to fresh water to spawn.

**AQUIFER** - A geologic stratum containing ground water that can be withdrawn and used for human purposes.

**BASIN** - A land area bounded by high points, which drain s all surface water into a single stream.

**BEST MANAGEMENT PRACTICES** - Structures, conservation practices, or regulations that improve water quality and reduce runoff, or reduce the impact of development on water quality and quantity.

**BIOCHEMICAL OXYGEN DEMAND (BOD)** - Amount of oxygen used by microorganisms (and by chemical reactions) in the biodegradation process. BOD is usually measured at 20 degrees Celsius for 5 days.

**BRAIDING** - A stream that divides into an interlacing of tangled network of several branching and reuniting channels separated from each other by branch islands or channel bars.

**BUFFER** - An area adjacent to a water body where the vegetation is protected from clearing and development so as to protect the water resources.

**CATCH BASIN** - A chamber or well, usually built at the curb-line of a street, for the admission of surface water to a sewer or sub-drain, having at its base a sediment sump designed to retain grit and detritus below the point of overflow.

**CLEARING** - The destruction and removal of vegetation by manual, mechanical, or chemical methods.

**CLUSTER DEVELOPMENT** - A development design technique which arranges buildings on a specific area of a site so as to preserve a portion of the entire site for common open space, recreation, or preservation of environmentally sensitive areas in perpetuity.

**CONSERVANCY** - Conservation of natural resources.

**CONTAMINATE** - To make impure by contact or mixture with a contaminate.

**CONTIGUOUS CORRIDOR** - The immediate area adjacent to the creek boundary.

**CONVEYANCE SYSTEM** - The drainage facilities which collect, contains and provides for the flow of surface and stormwater.

**COTTIDS** - Resident fresh water fish

**CULVERT** - Pipe or concrete box structure which drains open channels, swales or ditches under a roadway or embankment.

**CREATED WETLAND** - Man-made wetland.

**DETENTION FACILITY** - A facility (eg, pond, vault, pipe) in which surface and storm water is temporarily stored.

**DETENTION POND** - A stormwater storage pond with a "dead storage" volume and a "live storage" volume. The dead storage space is constantly filled, the live storage is filled by the runoff from a storm and then slowly drained.

**DETRITUS** - Particulate organic material together with primary decomposer organisms such as fungi and bacteria.

**DISCHARGE** - Volume of water flowing in a given stream at a given place and within a given period of time, usually expressed as cu. meters per sec, or cu. feet per sec.

**DRY POND** - A stormwater management facility that fills during rainstorms and completely drains between storms. These ponds have restricted outlets designed to give a nominal water residence time of more than 24 hours.

**EFFECTIVELY IMPERVIOUS** - The amount of surface area which is rendered impervious because of structures erected on it.

**EFFLUENT** - Waste liquid flowing into a river or estuary from a house, industry, sewage treatment plant, or other source.

**ENERGY DISSIPATOR** - The reduction of the total energy of the water by a mechanism which reduces velocity prior to or at, discharge from the outfall in order to prevent erosion.

**EROSION** - The wearing away of land surface by running water, wind, ice or other geological agents.

**EROSIONS CONTROL** - Techniques used to trap sediments carried by runoff from disturbed sites. Common practices include the use of mulches, filter fences, or straw bales.

**ESTUARINE** - A semi-enclosed body of salt water diluted by fresh water form river or stream. A very important rearing and transition area for most salmonid species.

**EUTROPHICATION** - Refers to the process where nutrient over-enrichment of water leads to excessive growth of aquatic plants, especially algae.

**FAUNA** - Assemblage of animals that occur in a specific region.

**FECAL COLIFORM BACTERIA** - Bacteria common to the intestinal tract of mammals. Indicates biowaste from livestock or humans and may be a sign of disease-causing pathogens.

**FILL** - The deliberate placement of (generally) inorganic materials in a stream, usually along the bank.

**FISH BLOCKAGES** - Man-made or naturally occurring obstacles which do not allow for the passage of most fish.

**FLOODPLAIN** - The total area subject to inundation by the base flood including the flood fringe and floodway.

**FLORA** - Localized plant life and vegetation indigenous to the area.

**GEOMORPHOLOGY** - Geologic study of the configuration and evolution of land forms.

**GLIDE** - Calm water flowing smoothly and gently, with moderately low velocities ( 10-20 cm/sec ) and little or no surface turbulence.

**GRASS-LINE SWALE** - A drainage facility similar to a shallow, gently sloped ditch planted with vegetation (most often grass). The sloped sides provide additional surface area which allows the vegetation to filter and trap pollutants suspended in runoff.

**GROUND WATER** - Any water in the ground which is not open to the air, such as underground aquifers.

**GROUND WATER RECHARGE** - Inflow to a ground water reservoir.

**HABITAT** - The specific area or environment in which a particular type of plant or animal lives. An organism's habitat must provide all of the basic requirements for life and should be protected from harmful contaminants.

**HEAVY METALS** - Metals of high specific gravity, present in municipal and industrial wastes, that pose long-term environmental hazards. Such metals include cadmium, chromium, cobalt, copper, lead, mercury, nickel, and zinc.

**HIGH FLOWS** - Peak flows during storm events, which are considerably above the normal mean flows for a specific creek or river.

**HYDROLOGIC CYCLE** - The circuit of water movement from the atmosphere to the earth and return to the atmosphere through various stages or processes as precipitation, interception, runoff, infiltration, percolation, storage, evaporation, and transpiration.

**HYDROLOGY** - The science of the behavior of water in the atmosphere, on the surface of the earth, and underground.

**HYDROPERIOD** - A specific span of time or stage within the hydrologic cycle.

**HYRDOPHYTE** - Any plant growing in water or on a substrate that is at least periodically deficient in oxygen during some part of the growing season, as a result of excessive water content.

**IMPERVIOUS** - Any surface which cannot be effectively penetrated by water such as, asphalt, rooftops or compacted surfaces.

**INFILTRATION** - The downward entry of water into the surface of soil, as contrasted with percolation, which is movement of water through soil layers.

**LARGE ORGANIC DEBRIS (LOD)** - Any large piece of relatively stable woody material having a diameter greater than 10 cm and a length greater than 1 m that intrudes into the stream channel.

**LIMNOLOGY** - The scientific study of the life and phenomena of lakes, ponds and streams.

**MASS WASTING** - A general term for the dislodgement and downslope transport of soil and rock material under the direct application of gravitational body stresses.

**MICROHABITAT** - That specific combination of habitat elements in the locations selected by organisms for specific purposes and/ or events. Expresses the more specific and functional aspects of habitat and cover. Separated from adjoining microhabitats by distinctive physical characteristics such as velocity, depth, cover, etc.

**MORPHOLOGY** - The study of the structure and form of living organisms.

**NON-POINT POLLUTION** - Diffuse, overland runoff containing pollutants. Includes runoff collected in storm drains.

**ON-SITE STORM WATER SYSTEM** - A system designed for a specific site intended to deal with on-site storm water.

**OUTFALL** - The point where water flows from a manmade conduit, channel, or drain into a water body or other natural drainage feature.

**OUTWASH** - Gravel, sand, and silt, usually stratified, produced by glaciers and deposited by water that originated from the melting of glacial ice. Outwash deposited ahead of a progressing glacier is termed advance outwash. When deposited by the receding glacier, it is known as recessional outwash.

**PATHOGENS** - Microorganism which causes disease.

**PEAK FLOWS** - The maximum instantaneous rate of flow during a storm, usually in reference to a specific design storm event.

**PEAT** - Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture.

**PERMEABILITY** - The quality that enables the soil to transmit water or air, measured as the number of inches per hour that water moves downward through the saturated soil.

**PERVIOUS** - A soil or material that has the specific quality of allowing the passage of water.

**PESTICIDES** - A general term used to describe any substance - usually chemical - used to destroy or control organisms; includes herbicides, insecticides, algicides, fungicides, and others. Many of these substances are manufactured and are not naturally found in the environment.

**POINT SOURCE POLLUTION** - A pipe that discharges effluent into a stream or other body of water.

**POLLUTANT** - Something that pollutes or contaminates air, soil or water.

**POTHOLE** - A topographic depression formed by glacial movement, possibly created by the melting of an isolated block of glacial ice.

**REGIONAL DETENTION FACILITY (POND)** - A stormwater quantity control structure designed to correct existing excess surface water runoff problems of a basin or subbasin.

**REGULATORY MEASURES** - Rules and regulations which are incorporated to insure overall water and habitat quality.

**RETENTION POND** - A stormwater storage pond that collects runoff and only releases it through infiltration or evaporation.

**REVEGETATION** - The process of restoring vegetation to a disturbed area.

**RIPARIAN** - Describing a stream or wetland and the surrounding environment which interacts directly with the water body. A riparian zone typically includes a stream and the low and high streambanks around it.

**RUNOFF** - The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

**SCOUR** - The localized erosion of channel banks and channel beds due to excessive velocity of the flow of surface and stormwater runoff.

**SEDIMENT** - Fragmental material that originates from weathering of rocks and decomposition of organic material that is transported by, suspended in, and eventually deposited by water or air or is accumulated in beds by other natural phenomena.

**SEDIMENTATION** - The act or process of depositing sediment from a state of suspension in air or water.

**SEDIMENTATION POND** - Commonly used during construction, these temporary ponds collect and store eroded particles before they can reach a water body or adjacent property. A common supplement to other erosion control techniques.

**SENSITIVE AREA** - Components of the natural environment easily degraded by various land uses. Sensitive areas include wetlands, steep slopes, aquifer sensitive areas, and fish and wildlife habitat areas.

**SETBACK** - A zone designed to protect sensitive areas from negative impacts associated with development.

**SETTLING POND** - A pond used to detain water for the purpose of allowing solids to separate from the water.

**SIGNIFICANT TREE** - Native and non-native trees of a ten inch trunk diameter.

**SILTATION** - The process by which a river, lake, or other water body becomes clogged with sediment. Silt can clog gravel beds and prevent successful salmon spawning.

**SINUOSITY** - The ratio of actual length between two points on a channel to the straight line distance between the same two points. Also the ratio of channel length to down valley length. Channels with sinuosities of 1.5 or more are called "meandering".

**SOIL FAILURE** - Occurs when the load applied to the soil is greater than the bearing capacity of the soil.

**SOIL INFILTRATION** - Stormwater management technique, which captures runoff and slowly discharges it to the soil. Functions best in soils of a medium texture which are less likely to clog, but effectively trap pollutants.

**STORM EVENT** - The occurrence of precipitation over a specific duration of elapsed time at a specific intensity, such as a 2, 10 or 100 year storm event.

**SUBBASIN** - A drainage area which flows to a point contained within a larger basin.

**SUBSTRATE** - The mineral and/or organic material that forms the bed of the stream.

**SUSPENDED SOLIDS** - Organic or inorganic particles that are suspended in and carried by the water. the term includes sand, mud, and clay particles (and associated pollutants) as well as solids in stormwater.

SWALE - A shallow drainage conveyance with relatively gentle side slopes, generally with flow depths less than one foot.

TILL - Unsorted, nonstratified glacial drift consisting of clay, silt, sand and rounded rock fragments ( cobbles, stones, boulders) transported and deposited by glaciers.

TOXIC - Poisonous, carcinogenic, or otherwise directly harmful to life.

URBANIZING - The changing of an undeveloped area to an area which qualifies as urban.

VEGETATION - The plants and organic growth of a specific area.

WATER TABLE - The upper surface or top of the saturated portion of the soil or bedrock layer; indicates the uppermost extent of ground water.

WETLAND - Land which is inundated or saturated by enough ground or surface water to support vegetation adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands are critically important habitat for fish and wildlife.



## **APPENDIX 11**

### **DETERMINATION OF NONSIGNIFICANCE**

DETERMINATION OF NONSIGNIFICANCE

Proponent: City of Olympia  
Joanne Richter  
837 7th Avenue SE  
Olympia, WA 98507

RECEIVED  
JUN 16 1992

Description of Proposal: Adoption of the Percival Creek Comprehensive Drainage Basin Plan which makes a variety of structural and non-structural recommendations that address flooding habitat and water quality in the basin.


Location of Proposal: Citywide

Section/Township/Range: Citywide Tax Parcel No.: Citywide

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

Jurisdiction: Olympia  
Lead Agency: Planning Department  
Responsible Official: Harold Robertson, AICP, Planning Director

Date of Issue: June 12, 1992  
Comment Deadline: June 29, 1992

  
Paula Ehlers, Environmental Review Officer

This Determination of Nonsignificance (DNS) is issued under 197-11-340(2); the lead agency will not act on this proposal for 15 days from the date of issue. No permits may be issued, and the applicant shall not begin work until after the comment deadline has expired and any other necessary permits are issued. If conditions are added, deleted, or modified during the 15 day review period, a modified DNS will be issued. Otherwise, this DNS will become final after the expiration of the comment deadline.

NOTE: Pursuant to RCW 43.21C.075 and Olympia City Code 14.04.160(A), a project denial based upon environmental information, and a conditioned or mitigated DNS may be appealed by any agency or aggrieved person. Appeals may only be filed for those conditions or mitigating measures identified in this DNS and the threshold determination is not appealable. Such appeals may be filed with the Planning Department within ten (10) days of the issuance of the written determination.

NOTE: The issuance of this Determination of NonSignificance does not constitute project approval. The applicant must comply with all applicable requirements of Thurston County Departments and/or the Hearing Examiner prior to receiving construction permits.

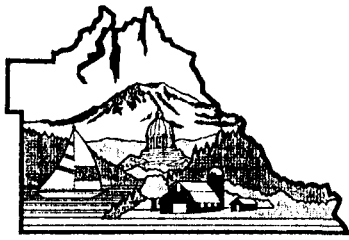
Olympia Planning Department, Environmental Review Officer  
Building #1, Administration  
2000 Lakeridge Drive S.W.  
Olympia, WA 98502 (206) 786-5745

37:1b

cc: Department of Ecology (2)	Adjacent Property Owners	Jeff Fant
Jackie Boettcher	Donna Buntin	Marianne Flannery
Cynthia Wilson	Maher Abed	Steve Friddle
Jean Taylor	Mark Blosser	Dee Horiuchi
Steve Wise	Dept of Fisheries	City of Tumwater
Dept of Natural Resources	US Fish and Wildlife	City of Lacey
US Army Corps of Engineers	Thurston Co Planning	All planning areas

**APPENDIX 12**

**LETTERS OF CONCURRENCE**



**THURSTON COUNTY**  
**WASHINGTON**  
SINCE 1852

George L. Barner, Jr.  
District One  
Diane Oberquell  
District Two  
Les Eldridge  
District Three

## BOARD OF COUNTY COMMISSIONERS

September 22, 1992

Ms. Joanne E. Richter  
Water Resources Program Supervisor  
City of Olympia  
Department of Public Works  
P.O. Box 1967  
Olympia, WA 98507-1967

Dear Ms. Richter:

**SUBJECT: Indian/Moxlie and Percival Creek Comprehensive Drainage Basin Plans**

Thank you for the opportunity to review and comment on the Indian/Moxlie and Percival Creek Comprehensive Drainage Basin Plans. Thurston County has recognized the importance and supported development of the plans to identify surface water quality and quantity problems, and the solutions to address current and future problems. The Board commends you on the preparation of two plans that clearly identify actions that are aimed to protect our surface water resources in Thurston County.

This letter serves as Thurston County's statement of concurrence on the Indian/Moxlie and Percival Creek Comprehensive Drainage Basin Plans. Thurston County agrees with the goals and objectives of the Plan and with the actions specified for the County subject to the following:

1. Availability of grant or specified local funds to carry out the actions or to accomplish them within the specified time period.

With regards to funding, the County will make every effort to pursue funding but does not make a budget commitment through this statement. We also do not agree to pursue the actions if funding is unavailable.

2. The plans should not be static documents. As new information becomes available, Thurston County may wish to meet the goals and objectives of the plans through different actions.

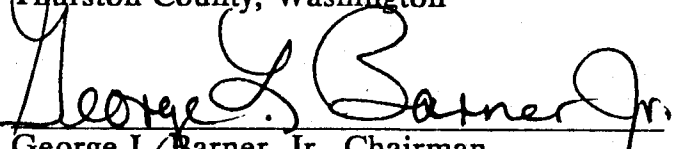



Ms. Joanne Richter letter  
September 22, 1992  
Page 2

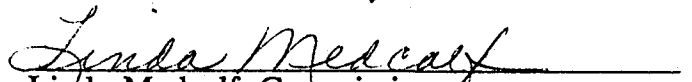
Once again, thank you for the opportunity to review and comment on the Indian/Moxlie and Percival Creek Comprehensive Drainage Basin Plans. We look forward to cooperative solutions in addressing our common surface water management needs.

Sincerely,

BOARD OF COUNTY COMMISSIONERS  
Thurston County, Washington

  
George L. Barner, Jr., Chairman

  
Diane Oberquell, Commissioner

  
Linda Medcalf, Commissioner

555 ISRAEL ROAD S.W.  
TUMWATER, WA 98501

206/754-5855  
INFORMATION

206/754-4126  
FACSIMILE

206/754-4120  
MAYOR  
COUNCIL  
CITY ADMINISTRATOR

206/754-4121  
CITY ATTORNEY  
HUMAN RESOURCES

206/754-4130  
FINANCE DEPARTMENT  
BUSINESS LICENSES

206/754-4133  
UTILITIES



206/754-4140  
ENGINEERING  
206/754-4141  
PUBLIC WORK  
OPERATION  
MAINTENANCE  
206/754-4160  
COMMUNITY DEVELOPMENT  
PLANNING  
PARKS & RECREATION  
BUILDING & GROUND  
206/754-4180  
DEVELOPMENT SERVICES  
ZONING  
INSPECTION  
DEVELOPMENT ENGINEERING  
206/754-4170  
FIRE DEPARTMENT  
206/754-4190  
MUNICIPAL COURT  
206/754-420  
POLICE DEPARTMENT

November 5, 1992

Ms. Joanne E. Richter  
Water Resources Program Supervisor  
Department of Public Works  
City of Olympia  
PO Box 1967  
Olympia, WA 98507-1967

RECEIVED

NOV 11 1992

OLYMPIA  
PUBLIC WORKS DEPT.

RE: Percival Creek Comprehensive Drainage Basin Plan

Dear Ms. Richter:

Attached to this letter is the City of Tumwater's Resolution No. 472, adopting the Percival Creek Plan with amendments. The City of Tumwater now concurs with the plan and looks forward to its joint implementation by the City of Tumwater, City of Olympia, Thurston County and the Department of Ecology.

Thank you and all of your staff for putting forward the hard efforts necessary to make this plan a document that we all can subscribe to and support in the years to come.

Sincerely,

PETER N. FLUETSCH

Mayor

PNF:kj

Attachment

c: Leonard Smith  
Greg Wilder  
Doug Baker

RESOLUTION NO. 472

A RESOLUTION adopting the Percival Creek Comprehensive Drainage Basin Plan.

WHEREAS, the City of Tumwater has participated with the jurisdictions of Olympia, Thurston County and the Washington State Department of Ecology in the preparation of the Percival Creek Comprehensive Drainage Basin Plan; and

WHEREAS, the Basin Plan puts forward a comprehensive and coordinated program to effectively reduce, store and treat storm water so as to protect and enhance the watershed environment; and

WHEREAS, the City Council's Public Works Committee held a series of meetings reviewing the Basin Plan and recommended its approval with amendments, attached hereto as exhibit "B";

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF TUMWATER, that the Percival Creek Comprehensive Drainage Basin Plan, attached hereto as exhibit "A", and as amended by exhibit "B", is hereby adopted.

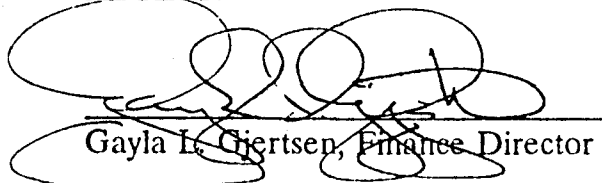
Adopted this 3rd day of November, 1992.

CITY OF TUMWATER

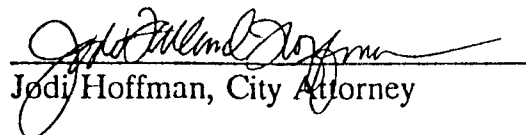


Peter N. Fluetsch, Mayor

ATTEST:

  
Gayla L. Giersten, Finance Director

APPROVED AS TO FORM:

  
Jodi Hoffman, City Attorney