

Goal 6

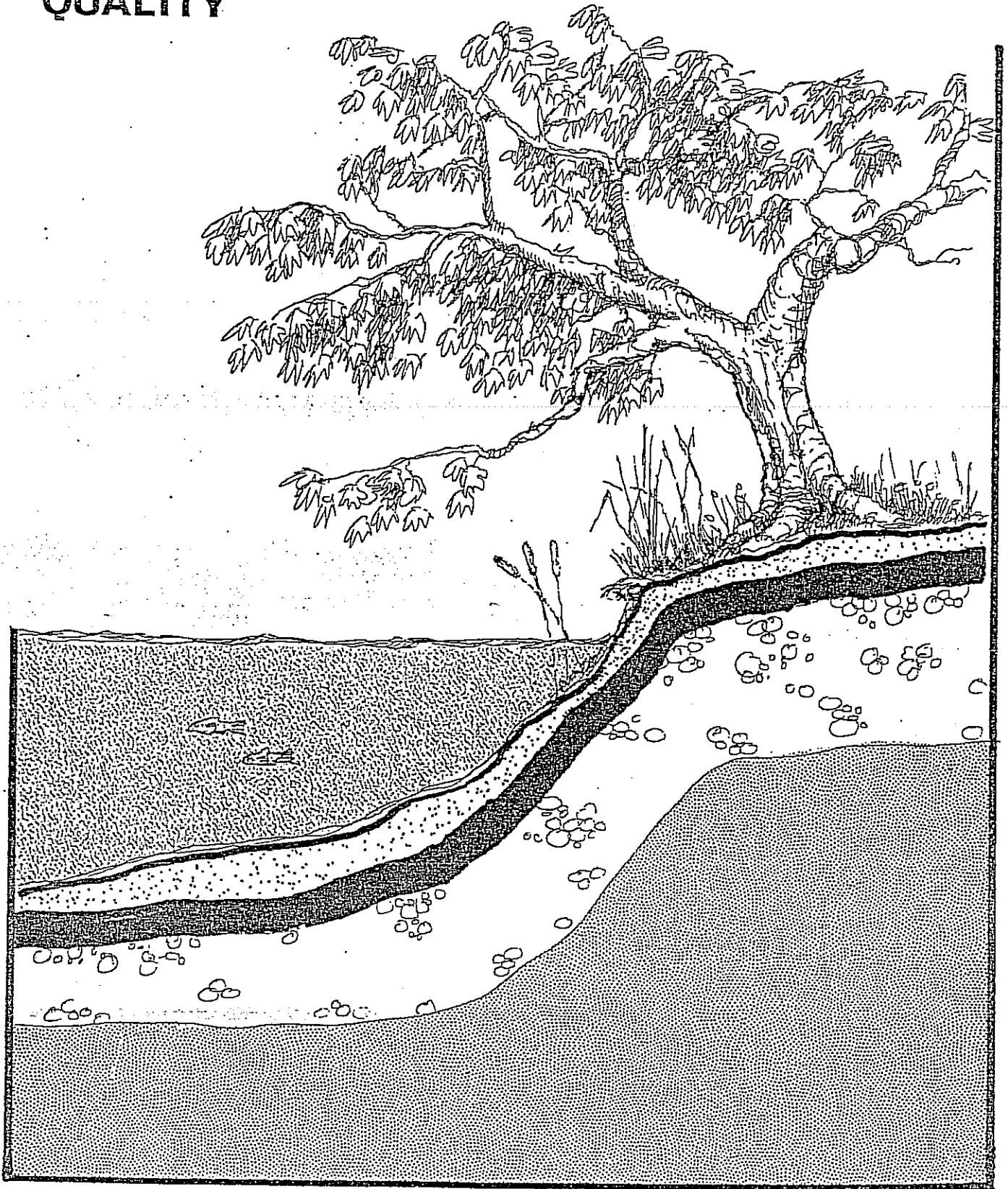
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CLATSOP COUNTY
GOAL 6
COUNTY-WIDE ELEMENT

AIR, WATER and LAND RESOURCES
QUALITY



GOAL 6 AIR, WATER, AND LAND RESOURCES QUALITY

1. Adopt a policy to assure that the County will comply with state and federal environmental standards.

Proposed addition to the County Comprehensive Plan:

Any development of Land, or change in designation of use of land, shall not occur until it is assured that such change or development complies with applicable state and federal environmental standards.

Waste discharges from any development, when combined with existing discharges from existing development, shall not result in a violation of state or federal environmental quality statutes, rules, or standards.

Proposed change in the County Land and Water Development and Use Ordinance:

State and Federal Permits. Applicants for development which require a state or federal permit shall submit to the Planning Director a copy of: the completed permit application, other supporting material provided to the permit granting agency, and other pertinent information demonstrating that the development is consistent with the Comprehensive Plan and this Ordinance.

COUNTY-WIDE ELEMENT

Goal 6

Air, Water and Land Resources Quality

Adopted July 23, 1980 by
Clatsop County Board of Commissioners

Introduction

Clatsop County is fortunate in that it generally has clean air and water. The quality of the County's environment is a factor that yearly draws many visitors to the area and also contributes greatly to the quality of life of its residents.

Basic Findings

Air Quality

The small population, strong year round ocean winds and large amounts of forest lands help to mitigate and remove what localized air quality problems exist in Clatsop County during most of the year. The major point sources of air pollution in the County are the Wauna paper mill and the Astoria plywood mill, both of which are meeting the requirements of their Air Contaminant Discharge Permits. The Wauna mill has installed air pollution control equipment which is removing an estimated 90-95% of its air contaminants.

DEQ air quality officials do not feel that there are significant air pollution problems in Clatsop County. Air Contaminant Discharge Permits are monitored on a regular basis by the State, and the combination of pollution control equipment and the wind in the area mitigate against the need for additional controls. Several major sources of air pollution will be eliminated when the County closes the remaining burning dumps after approval of a new landfill site.

Under EPA and DEQ regulations some air quality deterioration through industrial development could take place in Clatsop County without exceeding national air quality standards.

Water Quality

Because of its coastal location, high rainfall and presence of the Coast Range Mountains, Clatsop County is rich in water resources. Besides the rivers (including the Columbia River, the largest river in western North America), streams, creeks and lakes, there are two known aquifer areas; Clatsop Plains and Gnat Creek aquifers.

Pollution sources in Clatsop County's streams and rivers come from point (direct sources such as sewage outfalls) and non-point (indirect sources such as sedimentation) sources. Point sources require discharge permits and are closely monitored by the Department of Environmental Quality (DEQ) and Environmental Protection Agency (EPA). Non-point sources are regulated by DEQ under the 208 Program. This program contains a statewide assessment of the location, type and severity of water quality problems including streambank erosion, sedimentation, excessive debris, water withdrawal, elevated water temperature and nuisance algae. A complete ranking of the above problems indicated that the Nehalem River has the greatest amount of water quality problems in Clatsop County. The ranking system was arbitrary but was designed to indicate relative problem areas within a region or county.

Since about 86% of the land area of Clatsop County is forest land, timber management has a significant effect on water quality. The Oregon Forest Practices Act and rules have been designated the best management practices to control forestry related water quality problems. The County has no local control over the enforcement of the Forest Practices Act.

Possible nitrate pollution of the Clatsop Plains aquifer has prompted the County, in conjunction with Warrenton, Hammond and Gearhart, to study and monitor the quality of the groundwater under the 208 Program.

A comparison of existing water rights with average monthly stream flows on most of the major rivers and streams in the County shows that water rights exceed minimum recommended stream flows for aquatic life. No appropriations of water except for human consumption, livestock consumption and water legally released from storage should be granted by a state agency when the average stream flow is less than that sufficient to support aquatic life.

Noise Control

The most probable future noise control problems in Clatsop County would be due to conflicts between noise sensitive properties and noisy industrial users, noise from major arterials and noise conflicts created by airports. In order to minimize these conflicts, noise considerations can be used when designating new industrial zoned land. In addition, performance standards for noise can be used in approving new commercial and industrial uses to minimize any conflicts with surrounding noise sensitive properties. The State Highway Department should be encouraged to use noise pollution considerations when realigning, improving, or building new highways.

The Seaside airport and its clear zones are located in the City of Seaside's and Gearhart's Urban Growth Boundaries. Appropriate zoning limiting conflicting uses will be developed during the UGB adoption process.

Areas surrounding the Clatsop County Airport that are or in the future may be exposed to an aviation noise environment of 55 Ldn have been planned and zoned for industrial, exclusive farm use, and low density residential use (in areas of existing residential use). The current large amounts of open space and agricultural, industrial, and low density residential zoning should result in compatibility with noise standards.

Policies

1. The County shall encourage the maintenance of a high quality of air, water and land through the following actions:
 - (a) encouraging concentration of urban development inside Urban Growth Boundaries,
 - (b) encouraging maintenance and improvement of pollution control facilities,

- (c) cooperating with the State Highway Department to provide an efficient transportation system. Methods to reduce congestion and air pollution on Marine Drive/Commercial Street should be explored.
 - (d) encouraging indigenous, clean industries such as fishing, boat building, tourism, and forest products utilization and
 - (e) encouraging development of resource recovery mechanisms such as recycling centers and wood waste processing.
2. The County Planning Department shall work with the Department of Environmental Quality (DEQ) to monitor and keep its environmental data base current including information on air quality, surface and groundwater quality, and land quality including waste disposal and erosion problems.
 3. The cumulative effect of development on the County's environment should be monitored and, where appropriate, regulated. When evaluating proposals that would affect the quality of the air, water or land in the County, consideration should be given to the impact on other resources - important to the County's economy such as marineresource habitat and recreational and aesthetic resources important to the tourist industry.
 4. The County shall continue its efforts to find an acceptable regional solid waste disposal site or an acceptable alternative (i.e. recycling, electricity generation).
 5. Recovery of wood wastes, rather than slash burning, shall be encouraged as a means of reducing air and water pollution, improving the economy, and for producing energy.
 6. Upon completion of the Clatsop Plains Groundwater Study, the County shall reevaluate the Clatsop Plains Community Plan to determine whether existing policies and standards are adequate to protect water quality in the aquifer, lakes and streams. Consideration shall be given to protection of the lakes from further degradation (eutrophication), and possible remedial actions to improve water quality.
 7. The County shall work to maintain the quality of its estuarine waters through participation in the regional Columbia River estuary planning process.
 8. The County shall cooperate with DEQ, State Forestry Department, State Transportation Department and other agencies in implementing best management practices to reduce non-point pollution.
 9. The County shall recommend that state agencies regulate the issuance of water rights so as to insure that the total water rights of a stream bed do not exceed the minimum stream flow.
 10. Subdivisionss adjacent to major arterials shall address the reduction of noise impacts in their site plans.

11. Performance standards for noise will be considered for inclusion as standards in the County's industrial-commercial zones.
12. The District Conservationist shall be used for technical evaluation of all development activities (including subdivisions and major partitions) that could create erosion and sedimentation problems with his/her recommendations incorporated into planning approvals.

Background Report

GOAL 6

AIR, WATER AND LAND QUALITY
IN CLATSOP COUNTY

by

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and

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of Planning and Development

January 23, 1980

Adopted July 23, 1980 by
Clatsop County Board of Commissioners

PREFACE

Clatsop County has been involved in the process of updating the Clatsop County Comprehensive Plan in order to comply with the Oregon Land Conservation and Development Commission's Statewide Planning Goals and Guidelines, and to develop sound comprehensive planning in the best interests of the area. This task has been undertaken incrementally, resulting in several informative and technical Background Reports to be used as the basis for policy formulation.

The planning staff has attempted to provide a clear, complete and accurate accounting of current circumstances within Clatsop County. Your comments are encouraged to assist in the maintenance and periodic update of the Clatsop County Comprehensive Plan.

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AIR QUALITY

In 1974, the Environmental Protection Agency (EPA) issued air quality regulations under the 1970 version of the Clean Air Act (P.L. 91-604) for the prevention of significant deterioration of air quality (PSD). These regulations established a scheme for protecting areas with air quality cleaner than the national ambient air quality standards (NAAQS). EPA's prevention of significant deterioration regulatory scheme was further modified by 1977 amendments to the Clean Air Act (P.L. 95-95).

Under existing EPA regulations, "clean areas" of the nation can be designated under one of three "classes". Specified numerical "ambient increments" of net air pollution increases are permitted under each class up to a level considered to be significant for that area. Class I increments permit only insignificant air quality deterioration; Class II increments permit moderate deterioration; Class III increments permit the greatest amount of deterioration, but in no case beyond the national air quality standards.

Under the Federal regulations, all areas of the state are automatically classified as Class II areas, except for mandatory Class I areas and "non-attainment" areas. The area classification scheme is administered and enforced through a pre-construction and pre-modification permit program for specific types of stationary air pollution sources. No such air pollution sources could begin construction or modification unless EPA and DEQ have found that the source's emissions will not exceed the numerical "increments" for the applicable class, and that the source would use the best available air pollution control technology.

Under this classification scheme, Clatsop County is a Class II area. According to DEQ's Handbook for Environmental Quality Elements of Oregon Local Comprehensive Plans, the Clatsop County airshed has 100% of its Class II TSP and SO₂ "increments" still available to it. This implies that some air quality deterioration, through industrial development, could take place without exceeding national air quality standards.

TABLE 2
POINT AND AREA AIR POLLUTION SOURCES
IN CLATSOP COUNTY, 1978
(tons per year)

<u>SOURCE</u>	<u>PARTICULATES (TSP)</u>	<u>CARBON MONOXIDE (CO)</u>
<u>POINT SOURCES</u>		
Astoria Plywood	518.7	24.0
Bumble Bee Seafood	2.4	--
Bioproducts	2.8	--
Cannon Beach Dump	4.2	22.3
City of Astoria Landfill	5.2	27.6
Clatsop County Road Department	34.1	--
Crown Zellerbach-Wauna	699.1	3720.3
Palmberg Paving	8.5	--
Port of Astoria--Grain Terminal	66.9	--
Seaside Dump	23.8	126.2
Tongue Point Job Corps	8.8	2.4
Warrenton Lumber	35.7	15.4
<u>AREA SOURCES</u>		
Motor Vehicles		
Light	148.8	12,377.2
Heavy	27.5	989.2
Off Highway Vehicles	2.2	650.5
Sea-going Vessels	24.8	75.0
Astoria Airport	--	46.1
Residential Space Heating	6.6	13.3
Commercial/Industrial Space Heating	33.1	7.3
Slash Burning/Forest Fires	131.7	936.2

Air Quality Problems

In Clatsop County, the small population, strong year-round ocean winds and large amount of forest lands help to mitigate air quality problems. However, the DEQ 1978 Oregon Air Quality Report indicates that Clatsop County has some significant air pollution "point sources" (point sources are specific sources such as factories, mills or burning dumps). Table 1 shows emissions for each Oregon county during 1978 for carbon monoxide (CO), nitrogen oxides (NO_x), sulfur oxides (SO_x) and total suspended particulates (TSP). The 3,942 tons of CO from the County's point sources are equal to Multnomah County's output. The 1,054 tons of SO_x are almost as much as that of Marion County.

The major sources of air pollution in Clatsop County are the Crown Zellerbach paper mill in Wauna and the Astoria plywood mill. Table 2 shows the particulate and CO emissions of all the point and area sources in the County. This indicates that the Wauna Mill produces 94% of the carbon monoxide pollutants in the County.¹ The wauna mill is also the major source of particulates, followed closely by the Astoria plywood mill. All of the point sources in the County are meeting the requirements of their Air Contaminant Discharge Permits. The Wauna mill has installed air pollution control equipment, which is removing an estimated 90% - 95% of its air contaminants.

DEQ air quality officials do not feel that there are significant air pollution problems in Clatsop County. Air Contaminant Discharge Permits are monitored on a regular basis by the State, and the combination of pollution control equipment and the wind in the area mitigate against the need for additional controls. Several major sources of air pollution will be eliminated when the County closes the remaining burning dumps and initiates a new disposal method. Unless the Federal air quality standards are changed, it is not anticipated that area or point source pollution will be reduced in the near future.

The lack of problems does not, however, relieve the County of controversy. The AMAX Aluminum Refinery was denied a permit by the Environmental Quality Commission to locate in Warrenton because of potential impact of flouride emissions on Youngs Bay, part of the Columbia River estuary. Therefore, though industry may locate in the County due to the existing air quality, each proposal is evaluated on its own merits. Local citizen concerns often play an important role in the decision to approve or deny discharge permits.

¹ 1978 Oregon Air Quality Report, DEQ, p. 31.

TABLE 4

SELECTED DATA

COLUMBIA RIVER ESTUARY TRIBUTARY STREAMS

STREAM	DRAINAGE BASIN (Square Miles)	MEASUREMENT LOCAT*	DISCHARGES, CFS		AVERAGE	(For Fish) RECOMMENDED STREAMFLOWS CFS				N/R*
			MIN.	MAX.		SUMMER MIN*	LOW OPT*	WINTER MIN*	HIGH OPT*	
Skipanon River	16	Mouth	1.6	585	49.5	None Established				1
Lewis & Clark River	62	Mouth	8.3	3,010	255	15	50	80	115	1
Youngs River	122	Mouth	18.4	6,600	588	15	82	138	190	1
Klaskanine River										
North Fork	NA	Stream Mile 4.7	3.0	245		8	31	70	86	2
South Fork	NA	Mouth	11.0	356	No Data	10	44	80	100	3
Walluski River	NA	No Data				None Established				
Bear Creek		No Data				3	10	15	26	
Big Creek	39	Stream Mile 2.9	21.0	538	No Data	20	52	90	130	2
Gnat Creek	26	No Data								
Hunt Creek		No Data								
Plympton Creek			4.85	No Data	No Data	4	13	20	34	

Source: CREST Inventory, p. 202-11.

*Location; Minimum; Optimum; Notes/Remarks

Specific Water Quality Problems in Clatsop County

Concern over the water quality of the Clatsop Plains has prompted the County, in conjunction with Warrenton, Hammond and Gearhart, to study the groundwater characteristics of the Plains under the 208 Program. Design of the study is currently underway. A preliminary study entitled Carrying Capacity of the Clatsop Plains Sand Dune Aquifer, was prepared in 1977 by hydrogeologist H. Randy Sweet. The primary concern of this and future studies is the protection of groundwater from nitrogen contamination. Among the recommendations of the study are 1) the limitation of dwelling density (with septic tank drainfields) to one per 1.2 acres, 2) the reduction of density of drainfields in critical areas, 3) the reservation of 1.6 square miles of dune lands for aquifer protection, and 4) additional monitoring. A summary of the findings from the report is included in Appendix I.

Sewage from failing septic tanks in the Westport-Wauna area has created a water quality problem in lower Plympton Creek. A sewer district has been formed and a preliminary sewer facilities plan completed. What has and will continue to delay the construction of the system is the current lack of federal funds. Currently funding is not expected for 3-5 years.

There is a question of water quality in some of the Clatsop County water systems due to the lower turbidity standard adopted in the Federal Safe Drinking Water Act of 1974. Astoria, for example, is not generally able to meet the lower standard during the rainy months of the year. Astoria presently supplies water to the unincorporated County water systems of the Fernhill, John Day, Willowdale, Olney-Wallooskee, and Burnside Water Districts.

The basin plans are to be updated every three years. The North Coast-Lower Columbia River plan is scheduled for revision during fiscal year 1980.

The Department of Environmental Quality has prepared a program to address non-point sources of water pollution. These non-point sources include agriculture, forest practices, and urban development. It contains a statewide assessment of the location, type and severity of water quality problems caused by non-point sources of pollution. Based on this assessment, priorities for non-point source water quality management will be assigned.

The Environmental Protection Agency requires that the State prepare an annual strategy for achieving the goals of its water quality plan. The major elements included are: a ranking of stream segments based on water quality problems and how the State plans to solve these problems and; a priority listing of municipal sewerage construction needs.

In part, the Department of Environmental Quality implements its water quality program through the issuance of permits. The Federal Water Pollution Control Act of 1972 requires that before waste can be discharged into a navigable stream, a waste discharge permit (NPDES) must be issued. In Oregon, the Department of Environmental Quality has the responsibility for issuing these permits. The Department of Environmental Quality also requires a Water Pollution Control Facilities permit (WPCF) for the construction and operation of those disposal systems that discharge no effluent into a stream. Both of these permits can only be issued if they are consistent with the Federal rules and guidelines and the applicable section of the State's water quality plan.

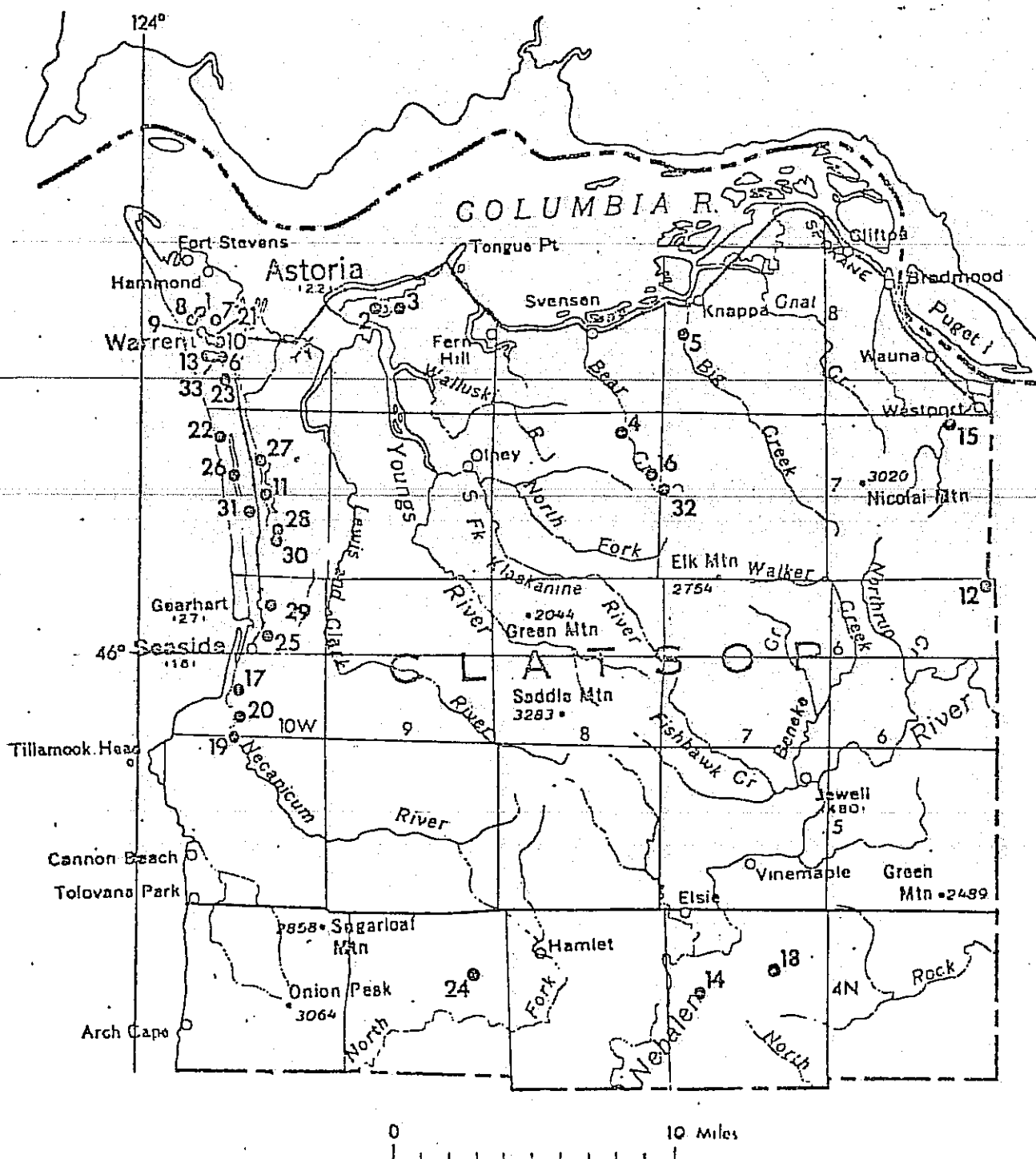
Prior to the issuance of a federal permit, such as an Army Corps of Engineers 404 permit for filling, the Department of Environmental Quality must certify that the proposed action will not violate the State's water quality standards.

The construction of an on-site sewage disposal facility requires approval from the Department of Environmental Quality. In Clatsop County, DEQ has the authority to issue these permits. Such a permit is required before a building permit can be issued.

The Department of Environmental Quality must approve all plans for municipal sewage and industrial waste treatment facilities, both new or expanded, and new or extended sewer systems before the start of construction. The Department of Environmental Quality must certify to the EPA that sewage works construction grant applications address a priority need in the State and that they meet State requirements. This certification is required for Step I (planning), Step II (design), and Step III (construction) grant applications.

FIGURE 2.

Locations and Identification Numbers of Lakes in Clatsop County
(Refer to Table 6).



Locations and identification numbers of lakes in Clatsop County.

	pH		CONDUCTIVITY		ALKALINITY	TOTAL HARDNESS	TOTAL DISSOLVED SOLIDS	TRANSPARENCY	COLOR	COLIFORM	DEPTH	ACRES
	SURFACE	BOTTOM	SURFACE	BOTTOM								
21. Shag Lake	7.1	6.6	133	128	22	27	96	4	70	8400	6	5
22. Slusher Lake	10.1	9.6	205	205	48	35	180	6	15	40	8	20
23. Smith Lake	7.8	6.7	92	92	21	25	180	-	30	2800	6	50
24. Soapstone Lake	6.5	6.1	35	35	20	16	-	6	40	274	24	10
25. Stanley Lake	7.7	-	170	-	43	68	156	0	100	660	1	4
26. Sunset Lake	8.2	7.3	172	172	56	48	180	3	-	2900	19	110
27. Taylor (Carnahan) Lake	-	-	-	-	-NOT-	AVAILABLE	-	-	-	-	25	9
28. Triangle Lake	7.0	6.3	105	120	18	19	116	1	100	4800	10	3
29. Unnamed Lake	7.1	7.2	122	250	48	60	168	1	150	150	15	4
30. Unnamed Lake	6.1	-	62	-	50	15	98	2	60	5100	5	2
31. West Lake	6.7	-	110	-	28	32	122	1	25	4000	14	35
32. Wickiup Lake	7.6	7.1	66	66	52	30	94	7	20	-	16	28
33. Wild Ace Lake	7.6	6.8	126	124	31	36	128	5	25	2100	6	11

Oregon's Statewide Assessment of Non-Point Source Problems

During 1977 and 1978, the Oregon Department of Environmental Quality undertook an assessment of non-point pollution sources throughout the State, funded by Section 208 of the Federal Clear Water Act of 1972. The information was compiled based on citizen and agency comments, and addressed the three major problems:³

1. Introduction of materials from diffuse sources of land runoff into streams, lakes, reservoirs and estuaries;
2. Physical alteration of a stream corridor, or the banks and adjacent areas of any water body; and
3. Reduction in streamflow, due to consumptive use, which causes an interference with other beneficial uses.

The inventory results are illustrated on statewide hydrologic unit maps at a scale of 1:500,000. These maps are on file in the County planning office. The problems, and their severity, as identified in Clatsop County are classified as follows:

Streambank Erosion:

Streambank erosion is the lateral movement of a stream channel that undercuts banks and removes soil and vegetation. When excessive, streambank erosion can destroy productive land and impact several beneficial uses of water. The uses most severely impacted are those associated with fish and aquatic species habitats. In addition, sediment derived from streambank erosion can interfere with domestic and industrial water supplies.

A severe streambank erosion problem is one which causes a substantial loss of land or a nearly

³DEQ, Oregon's Statewide Assessment of Non-Point Sources of Pollution, August, 1978.

Water Withdrawal:

Water withdrawal is a consumptive use of water that adversely affects other beneficial uses. In some cases, water withdrawal reduces streamflow to zero and therefore interferes with every other beneficial use. The two uses most commonly affected are downstream consumption and fish and aquatic species habitats.

A severe water withdrawal problem is one where consumptive uses cause local people to perceive there is insufficient water to sustain existing water rights and to meet other desired uses. A moderate problem exists where consumptive use threatens to impact other uses.

There is a severe water withdrawal problem on a small portion (2 miles) of the Upper Necanicum River, and a moderate problem on a 20-25 mile stretch of the Nehalem in the Elsie-Jewell area.

Elevated Water Temperature:

Elevated water temperature is an increase in temperature which interferes with aquatic life or other beneficial uses of water. The use most severely affected is the rearing of salmonid fish. Specifically, the most common impacts on salmonids are increased occurrence of diseases, decreases in dissolved-oxygen concentrations, and elimination of rearing and/or holding areas.

A severe water temperature problem is one where there is a substantial interference with salmonid fish production. A moderate problem exists when salmonid fish production is somewhat hindered.

The only stream with elevated water temperatures in Clatsop County is the Nehalem River. This problem is considered severe throughout its length, from Birkenfeld to the Nehalem Bay.

Nuisance Algae:

Nuisance algae or aquatic plant growths are excessive growths which interfere with the beneficial uses of water. Such excessive growths can interfere with water supplies, irrigation, fish rearing, recreation, and aesthetic quality. These growths usually indicate other types of problems in the water such as high nutrient concentrations and high temperatures.

A severe algae or aquatic plant growth problem is one which causes a substantial loss of money, time or recreation. A moderate problem occurs when local people perceive that losses are beginning to occur.

NOISE CONTROL

Although many believe noise is an irritation or annoyance, they are not aware of the direct effect excessive noise has on health. It is well documented that noise is a public health hazard, both physically and psychologically. For example, noise can cause or aggravate headache, muscle tension, fatigue and other reactions. Impairment of functions such as loss of performance, impairment of hearing and temporary and permanent hearing loss are caused by excessive noise exposure. Very common effects of noise are interference with communication, including direct conversations, radio, television and telephone. Other activities noise disrupts are rest, study and sleep. Feelings of annoyance, such as irritability, distractibility and frustration are also caused by noise. Physically measurable stress effects of noise such as glandular responses, cardiovascular response and hypertension are well documented. All of these adverse effects of noise on humans are cited as examples to understand why excessive noise is recognized as a threat to public health and welfare.

In 1971 the legislature gave the Environmental Quality Commission (EQC) power, through the Department of Environmental Quality (DEQ--enactment arm of EQC), to adopt Statewide Standards for permitted noise emissions in the State of Oregon and to implement and enforce compliance with these adopted standards.

Standards have been set in 4 areas:

1. for new motor vehicles sold in the State,
2. for motor vehicles presently in use,
3. for industry and commerce, and
4. for new and existing airports.

All new motor vehicles sold within Oregon must meet maximum allowable decibel limits. Vehicle categories include automobiles and light trucks, motorcycles, buses, snowmobiles and medium and heavy trucks. In-use motor vehicle emission standards have been established for road vehicles and off-road recreational vehicles.

Noise sources from industry and commerce must meet ambient noise standards measured at the nearest noise sensitive property. Noise sensitive property is defined as residences, schools, churches, libraries and other places where people normally sleep. The definition for industry is very broad. However, some activities are exempted for reasons of lack of control technology, lack of an adequate standard or preemption by federal regulations. Industrial and commercial noise standards are based upon protection of speech communication during the daytime (7 a.m. to 10 p.m.) and protection of sleep at night (10 p.m. to 7 a.m.). During the day, noise is generally any sounds that disturb normal speech. Tests have shown this to be sounds above 60 decibels. During the night, noise is any sounds that disturb sleep. Tests have shown this to be sounds above 45 decibels. The standards are written in statistical terms over a one hour sampling period. This allows some variations in the noise level over time, but limits the statistical distribution of the measured noise throughout the one hour sampling period. Special standards have been developed for industrial and commercial sources that produce impulsive sounds; e.g., blasts, drop forge and punch press noise.

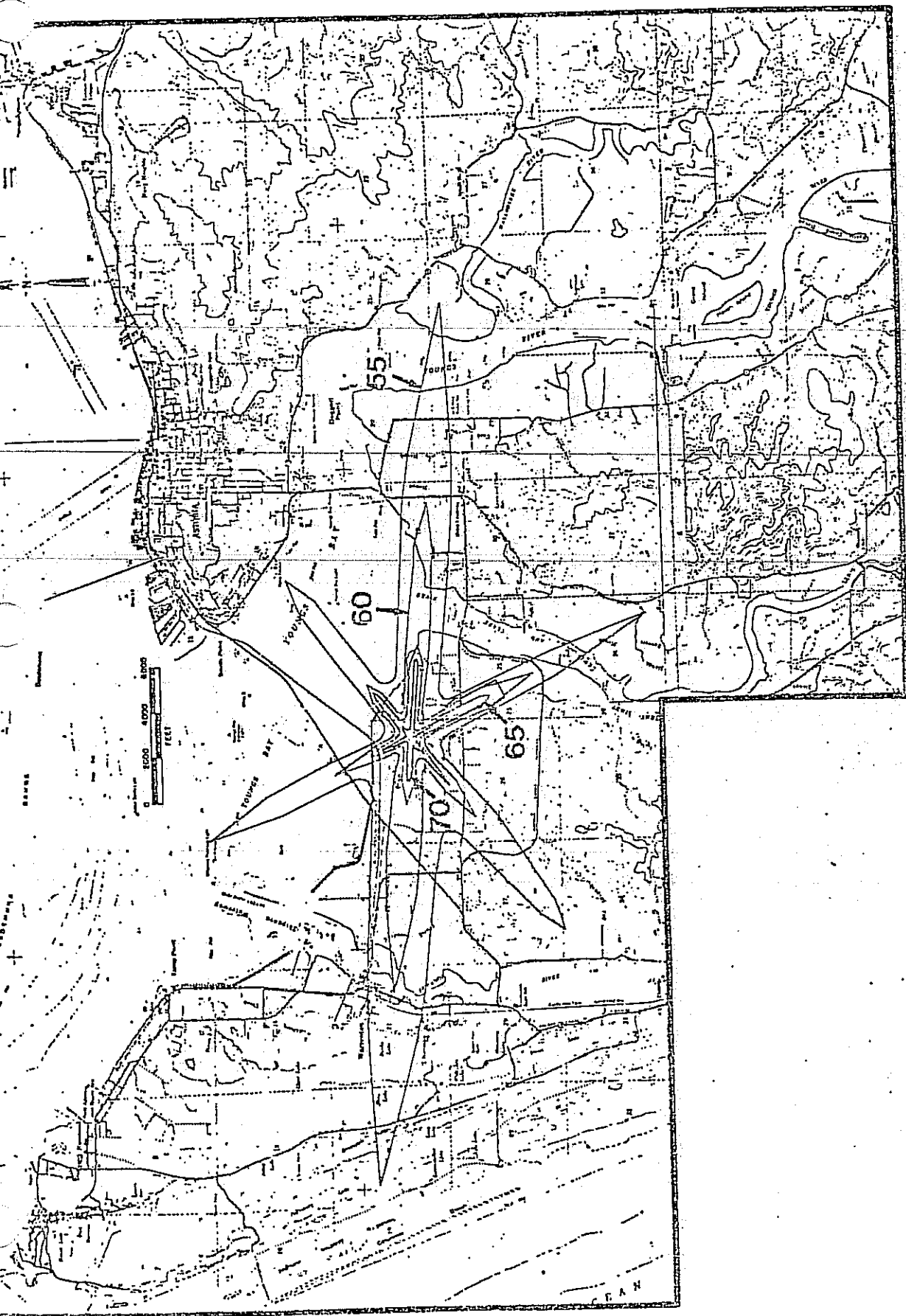


Figure 7. Clatsop County Airport Ldn Contours - Year 1978

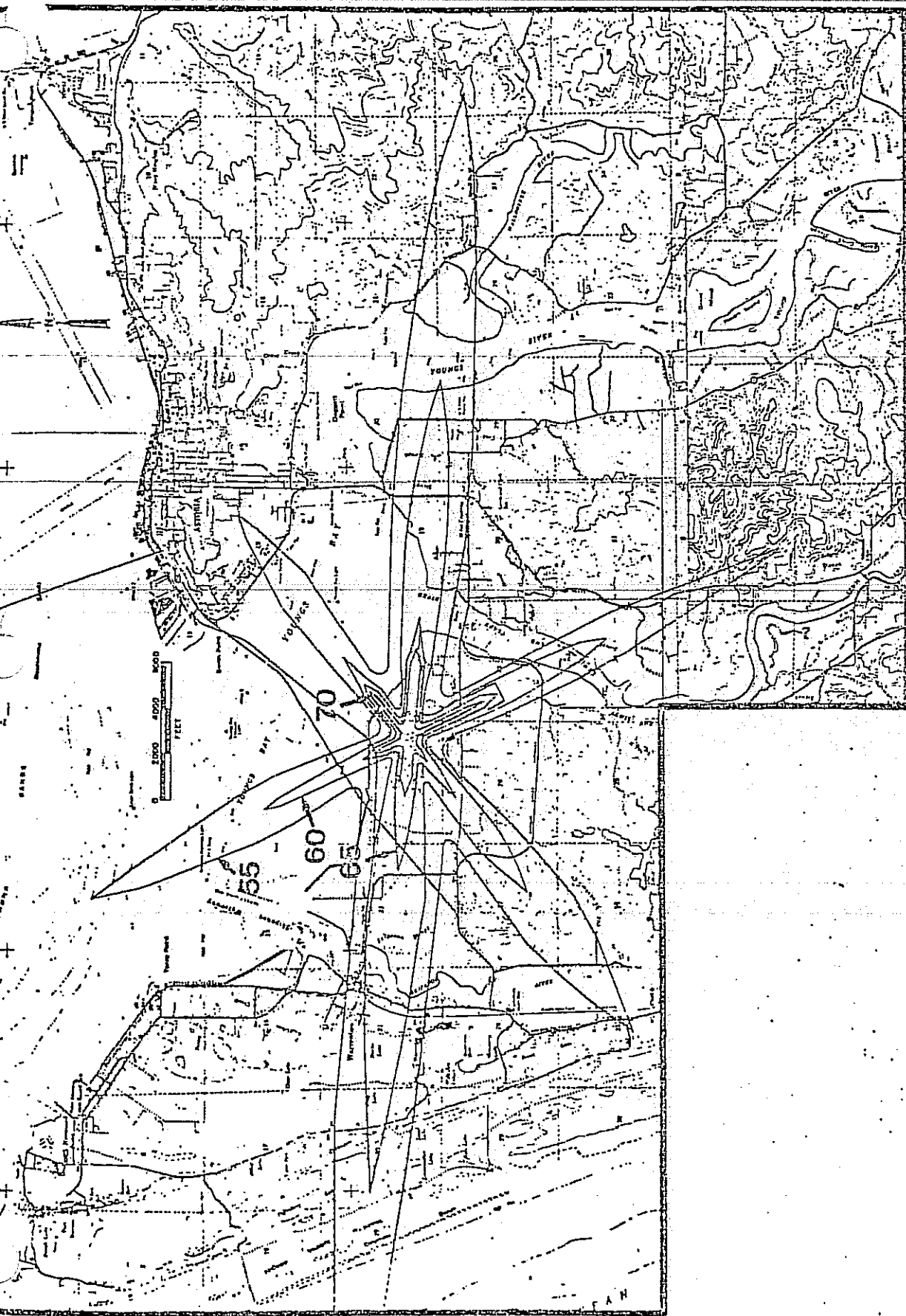


Figure 9. Clatsop County Airport Ldn Contours - Year 1990

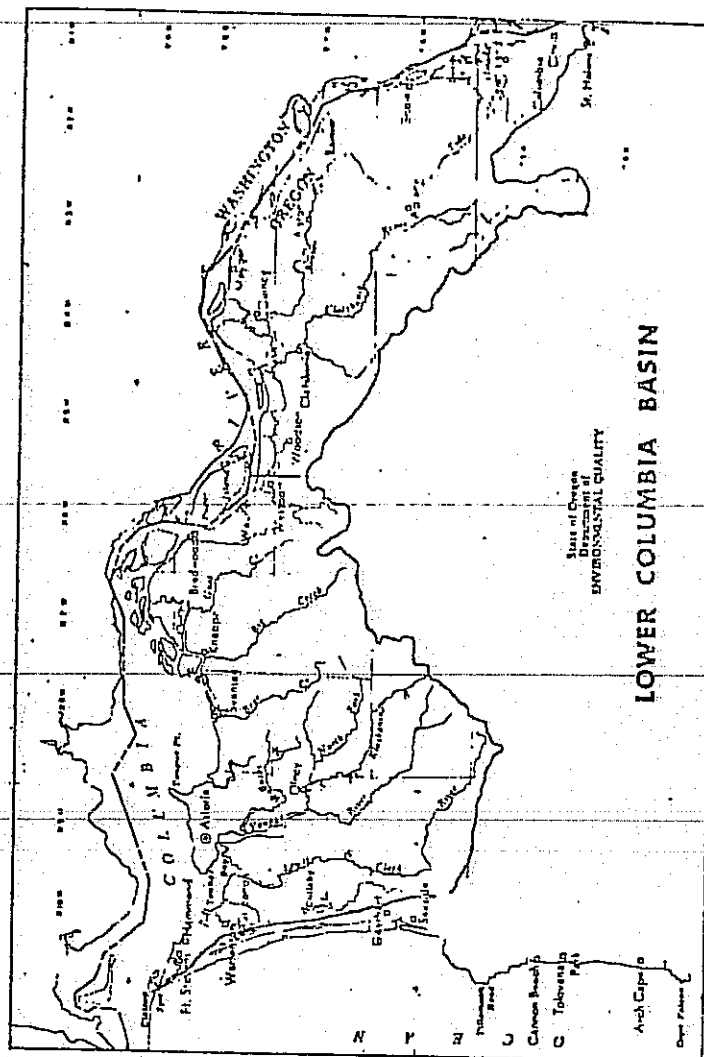
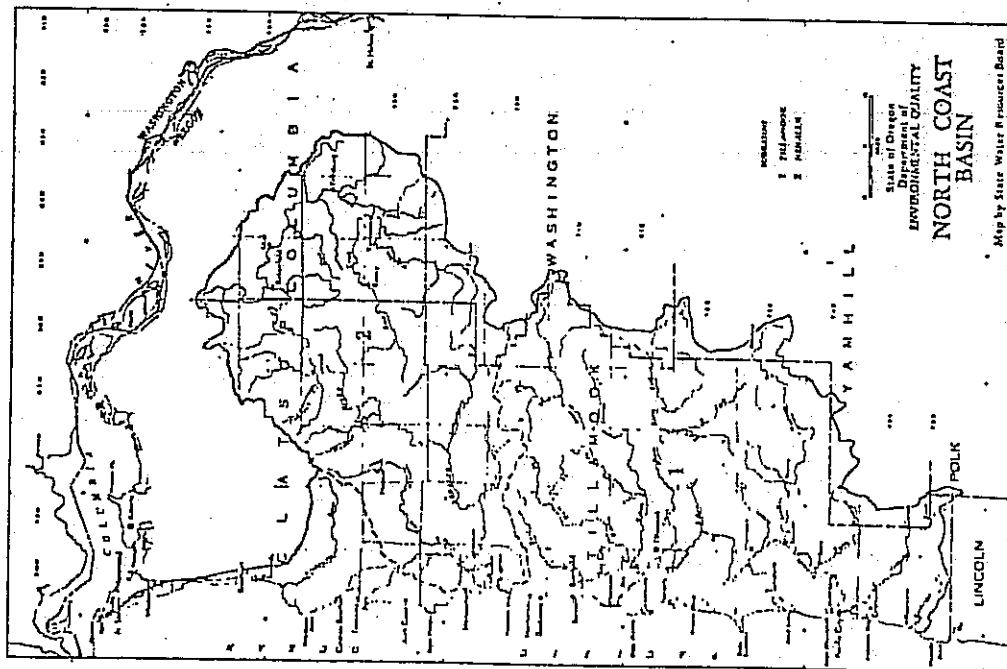
SOLID WASTE

Background information on solid waste is contained in the Public Facilities Background Report.

Vol. I, Statewide Water Quality Management Plan

V North Coast - Lower Columbia Basin

[A--Preface-----] (Note: Preface consolidated for all basins into Sections I and II.)



B [c]. Water Quality Standards Not to be Exceeded (To be adopted pursuant to ORS 468.735 and enforceable pursuant to ORS 468.720, 468.990 and 468.992.)

1. Notwithstanding the water quality standards contained below, the highest and best practicable treatment and/or control of wastes, activities and flows shall in every case be provided so as to maintain dissolved oxygen and overall water quality at the highest possible levels and water temperatures, coliform bacteria concentrations, dissolved chemical substances, toxic materials, radioactivity, turbidities, color, odor and other deleterious factors at the lowest possible levels.
2. No wastes shall be discharged and no activities shall be conducted which either alone or in combination with other wastes or activities will cause violation of the following standards in the waters of the North Coast-Lower Columbia River Basin:
 - a. Dissolved Oxygen (DO):
 - 1) Fresh Waters: DO concentrations shall not be less than 90 percent of saturation at the seasonal low, or less than 95 percent of saturation in spawning areas during spawning, incubation, hatching, and fry stages of salmonid fishes.
 - 2) Marine and Estuarine Waters (Outside of zones of unvelled marine waters naturally deficient in DO): DO concentrations shall not be less than 6 mg/l for estuarine waters, or less than saturation concentrations for marine waters.
 - 3) Columbia River: DO concentrations shall not be less than 90 percent of saturation.

c. Turbidity (Jackson Turbidity Units, JTU):

No more than a 10 percent cumulative increase in natural stream turbidities shall be allowed except for certain specifically limited duration activities which may be specifically authorized by DEQ under such conditions as it may prescribe and which are necessary to accommodate essential dredging, construction, or other legitimate uses or activities where turbidities in excess of this standard are unavoidable.

d. pH (Hydrogen Ion Concentration): pH values shall not fall outside the following ranges:

1) Marine [and-Estuarine] Waters: 7.0 - 8.5

2) Estuarine and Fresh Waters: 6.5 - 8.5

e. Organisms of the Coliform Group where Associated with Fecal Sources (MPN or equivalent MF using a representative number of samples):

1) Columbia River from the Highway 5 Bridge between Vancouver and Portland to the Mouth: Average concentrations shall not exceed 1,000 per 100 milliliters, [or exceed this value in more than 20% of the samples-] with 20% of samples not to exceed 2,400 per 100 ml.

2) Marine Waters and Estuarine Shellfish Growing Waters: [Average] Median concentrations shall not exceed 70 per 100 ml.

- k. Objectionable discoloration, scum, oily sleek or floating solids, or coating of aquatic life with oil films shall not be allowed.
- l. Aesthetic conditions offensive to the human senses of sight, taste, smell or touch shall not be allowed.
- m. Radioisotope concentrations shall not exceed Maximum Permissible Concentrations (MPC's) in drinking water, edible fishes or shellfishes, wildlife, irrigated crops, livestock and dairy products or pose an external radiation hazard.
- n. The concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed one hundred and five percent (105%) of saturation, except when stream flow exceeds the 10-year, 7-day average flood.
- o. Dissolved Chemical Substances:

[1] Columbia-River:] Guide concentrations listed below shall not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in Section [B] A.

Arsenic (As)	mg/l
Barium (Ba)	0.01
	1.0

set forth in this section, except those standards relating to aesthetic conditions, within a defined immediate mixing zone of specified and appropriately limited size adjacent to or surrounding the point of waste water discharge.

b. The sole method of establishing such mixing zone shall be by the Department defining same in a waste discharge permit.

c. In establishing a mixing zone in a waste discharge permit the Department:

- 1) May define the limits of the mixing zone in terms of distance from the point of the waste water discharge or the area or volume of the receiving water or any combination thereof,
- 2) May set other less restrictive water quality standards to be applicable in the mixing zone in lieu of the suspended standards; and
- 3) Shall limit the mixing zone to that which in all probability, will
 - a) Not interfere with any biological community or population of any important species to a degree which is damaging to the ecosystem; and
 - b) Not adversely affect any other beneficial use disproportionately.

- a. During periods of low stream flows (approximately May 1 to October 31): [High Quality Secondary] Treatment resulting in monthly average effluent concentrations not to exceed 20 mg/l of BOD and 20 mg/l of SS or equivalent control [shall be provided].
- b. During the period of high stream flows (approximately November 1 to April 30) and for direct ocean discharges: A minimum of [conventional] Secondary Treatment or equivalent [shall be provided] and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities [shall be operated] at [a] maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters.
- c. Effluent BOD concentrations in mg/l, divided by the dilution factor (ratio of receiving stream flow to effluent flow) shall not exceed one (1) unless otherwise approved by the EQC.
- d. Sewage wastes shall be disinfected, after treatment, equivalent to thorough mixing with sufficient chlorine to provide a residual of at least 1 part per million after 60 minutes of contact time unless otherwise specifically authorized by permit.
- e. Positive protection shall be provided to prevent bypassing raw or inadequately treated sewage to public waters unless otherwise approved by the Department where elimination of inflow and infiltration would be necessary but not presently practicable.
- f. More stringent waste treatment and control requirements may be imposed where special conditions may require.

- d. Industrial cooling waters containing significant heat loads shall be subjected to offstream cooling or heat recovery prior to discharge to public waters.
- e. Positive protection shall be provided to prevent bypassing of raw or inadequately treated industrial wastes to any public waters.
- f. Facilities shall be provided to prevent and contain spills of potentially toxic or hazardous materials and a positive program for containment and cleanup of such spills should they occur shall be developed and maintained.

NOTE:

E. Policies and Guidelines, and F. Implementation Program, which appeared in the original basin plan are consolidated in Sections III and IV, respectively.

Administration of the Rules

1. The State Forester take immediate steps to improve the level of training of forest practice officers. Training in soils, stream protection, road location and design, and harvesting systems is particularly important.
2. The State Forester encourage development of educational programs for training timber operators in stream protection methods, recognition of potential landslide and erosion problems, and forest practice rules requirements.
3. The State Forester continue development of guidelines to provide field supplements for the Forest Practices Act Rules, similar to the stream clearance guidelines.
4. The turnover rate among forest practice officers (particularly those with college training) be reduced by whatever means deemed appropriate, in order to promote and encourage stability and build field experience.
5. The percentage of college-trained forest practice officers be increased to raise the level of technical expertise in the field. Minimum qualifications should be established for forest practice officers to insure a specified level of expertise and field experience when hiring college graduates or promoting those from within the organization.
6. The number of inspections be increased, particularly preoperation inspections on high priority operations. Road maintenance inspection should also be increased.
7. The system for identifying high priority areas by improved be requiring submission of a very brief operations plan.
8. Forest practice officers be provided with sufficient time to inspect high priority operations by specifying a minimum review period between notification and initiation of the operation.
9. Verbal notification of the operations starting date be required on all operations if other than that specified on the notification.
10. Technical support be provided for forest practice officers especially in soils, hydrology, and forest engineering.

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