BEFORE THE COUNCIL OF THE
METROPOLITAN SERVICE DISTRICT

FOR THE PURPOSE OF AMENDING METRO CODE CHAPTER 3.02, AMENDING THE REGIONAL WASTE TREATMENT MANAGEMENT PLAN AND SUBMITTING IT FOR RECERTIFICATION	)))))	ORDINANCE NO. 89-317

WHEREAS, Metropolitan Service District Code Section 3.02.008(a) and (b) set forth criteria for the continuing planning process to implement the Regional Wastewater Management Plan (Regional Plan) and for amending support documents and maps; and

WHEREAS, The Water Resources Policy Alternatives Committee met on October 18, 1989, and recommends Council adoption of amendments; and

WHEREAS, Amendments needed to update the Regional Plan are based on new information from each of the 24 cities, three counties and Unified Sewerage Agency in Washington County showing updated local plans, maps and service agreements, and conformance of local plans with the Regional Plan; and

WHEREAS, If the Regional Plan is amended by the Council of the Metropolitan Service District, the Regional Plan will be subbmitted to the Oregon Environmental Quality Commission and Department of Environmental Quality and, in turn, to the U.S. Environmental Protection Agency for recertification; and

THE COUNCIL OF THE METROPOLITAN SERVICE DISTRICT HEREBY ORDAINS:

THE COUNCIL OF THE METROPOLITAN SERVICE DISTRICT HEREBY ORDAINS:

Section 1. The Regional Wastewater Management Plan Text and Maps (Collection System Service Areas Map, adopted December 22, 1988, and Transmission and Treatment Service Areas Map, December 22, 1988, 1897), referred to in Metro Code Section 3.02.002, are amended to read as shown in attached Exhibit A, which is hereby incorporated by reference and made a part of this Ordinance.

Section 2. The Council of the Metropolitan Service District hereby authorizes the Executive Officer to submit the Regional Plan, as amended, to the Oregon Environmental Quality and, in turn, to the U.S. Environmental Protection Agency for recertification.

ADOPTED by the Council of the Metropolitan Service District this __ 9th day of November, 1989.

Mike Ragsdale

Mike Ragsdale, Presiding Officer

ATTEST:

Steven Ware-Barrett

Clerk of the Council

EXHIBIT A

REGIONAL WASTEWATER MANAGEMENT PLAN

1988

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REGIONAL WASTEWATER MANAGEMENT PLAN

TEXT

ARTICLE I. INTENT AND POLICIES

SECTION 1. INTENT: The Regional Wastewater Management Plan is intended to:

(A) Address and implement portions of ORS 268.390 Planning for Activities and areas with Metropolitan impact; Review of local plans; urban growth boundary. A district council shall:

> "(1) Define and apply a planning procedure which identifies and designates areas and activi- ties having significant impact upon the orderly and responsible development of the Metropolitan area, including, but not limited to, impact on:
> . . . (b) Water quality . . .
> (2) Prepare and adopt functional plans for those areas designated under Subsection (1) of this section to control metropolitan area impact on air and water quality. . . ."

(B) Address portions of State Planning Goals #6 (Air, Water and Land Quality) and #11 (Public Facilities and Services).

(C) Establish a structure within which staging of regional wastewater management facilities for a minimum of twenty (20) years can be accomplished by local jurisdictions in conformance with the State Planning Goals.

(D) Provide a means for coordination of this Plan with regional and local jurisdiction plans.

(E) Allow establishment of a priority-setting structure for water quality needs within the Metro region.

SECTION 2. ASSUMPTIONS: The Regional Wastewater Management Plan is based upon the following assumptions:

(A) Publicly-owned wastewater management facilities will serve only those geographical areas as defined in the maps included as Part III of this plan.

(B) All wastewater facilities will be designed and operated in conformance with regional, state and federal water quality standards and regulations, and with due consideration for the groundwater resources of the area.

(C) Identification of a local jurisdiction's responsibility to provide wastewater management facilities in a geographical area will not be construed as a requirement to provide immediate public services.

(D) Any land use related action or any action related to development or provision of a public facility or service may be reviewed by the Metro Council for consistency with this Plan. The Metro Council will accept for review only actions which are of regional significance or which concern areas or activities of significant regional impact.

(E) The control of waste and process discharges from privately-owned industrial wastewater facilities not discharging to a public sewer is the responsibility of the State of Oregon.

(F) Because the need for wastewater treatment facilities is based on population, employment and waste load projections which cannot be estimated with certainty, use of such projections must be limited to a best effort evaluation. To ensure that these projections are sufficiently reliable, a monitoring process will be established to regularly compare the projected values with both actual values and new projections as they are produced by Metro studies. The projections are subject to revision to achieve consistency with actual conditions and new adopted projections in accordance with the Rules, Section 8, Continuing Planning Process.

SECTION 3. POLICIES AND PROCEDURES: The Regional Wastewater Management Plan includes the following policies and procedures:

(A) The Regional Wastewater Management Plan will be reviewed and updated annually. The timing, schedule and submission of this review and update shall be in compliance with the "recertification" procedures established by the Oregon Department of Environmental Quality and the U.S. Environmental Protection Agency. (Amendment No. 15, Ordinance No. 84-184)

(B) Projects receiving review under Executive Order No. 12372 shall be given positive comment only if in conformance with this Plan.

(C) Treatment plants shall be programmed for

modification only when one or more of the following conditions will exist:

(1) Dry weather flow exceeds plant capacity;

(2) Life of plant is reached;

(3) Wet weather flow exceeds plant capacity and I/I study results indicate wet weather flow should be treated;

(4) Organic loadings reach critical stage in plant opera- tion as determined by the Oregon Department of Environmental Quality;

(5) Facility Plan underway at the time of adoption of Part I of this Element;

(6) Metro Council determines modification to be necessary;

(7) Effluent flows result in an adverse effect on groundwater resources; or

(8) New treatment standards are adopted.

(D) Operating agencies, so designated by Part I of this Plan, shall conduct or provide such services as are mutually agreed upon with all management agencies which provide services to the same geo- graphical area.

(E) The Regional Wastewater Management Plan is based on a large body of information, including technical data, observations, findings, analysis and conclusions, which is documented in the following reports:

(1) Volume 1--Proposed Plan as amended by

amendments 1 through 8 adopted October 2, 1980.

(2) Volume 2--Planning Process.

(3) Technical Supplement 1--Planning Constraints.

(4) Technical Supplement 2--Water Quality Aspects of Combined Sewer Overflows, Portland, Oregon.

(5) Technical Supplement 3--Water Quality Aspects of Urban Stormwater Runoff, Portland, Oregon.

(6) Technical Supplement 4--Analysis of Urban Stormwater Quality from Seven Basins Near Portland, Oregon.

(7) Technical Supplement 5--Oxygen Demands in the Willamette.

(8) Technical Supplement 6--Improved Water Quality in the Tualatin River, Oregon, Summer 1976.

(9) Technical Supplement 7--Characterization of Sewage Waste for Land Disposal Near Portland, Oregon.

(10) Technical Supplement 8--Sludge Management Study.

(11) Technical Supplement 9--Sewage Treatment Through Land Application of Effluents in the Tualatin River Basin and Supplemental Report, Land Application of Sewage Effluents

Clackamas and Multnomah Counties.[1]

Portland-Vancouver Metropolitan Area Water Resources Study, U. S. Army Corps of Engineers, 1979.[2]

(12) Technical Supplement 10--Institutional, Financial and Regulatory Aspects.

(13) Technical Supplement 11--Public Involvement.

(14) Technical Supplement 12--Continuing Planning Process.

(15) Technical Supplement 13--Storm Water Management Design Manual.

(16) City of Gresham Sewerage System Master Plan, Brown and Caldwell, December 1980. (Amendment No. 14, Ordinance No. 84-184)

(17) Sewerage System Facility Plan for the I-205 Corridor and the Johnson Creek Basin, City of Portland, Oregon, Bureau of Environmental Services, June 1984. (Amendment No. 14, Ordinance No. 84-184)

(18) Sewerage Master Plan Update, Central County Service District No. 3, Multnomah County, Oregon, Kramer, Chin & Mayo, Inc., July 1983.

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[1]The Department of Environmental Quality shall assume responsibility for those portions of the CRAG "208" Study Area outside the boundaries of the Metropolitan Service District.

[2]Ibid.

(Amendment No. 14, Ordinance No. 84-184)

(19) Mid-Multnomah County Sewer Implementation Plan, CH2M HILL, September 1985.

(20) Findings and Order In the Matter of the proposal to Declare a Threat to Drinking Water in a Specially Defined Area in Mid-Multnomah County Pursuant to ORS 454.275 et. seq., Environmental Quality Commission, as ordered on April 25, 1986

(21) Evaluation of Hearing Record for proposal to Declare a Threat to Drinking Water in a Specifically Defined Area of Mid-Multnomah County Pursuant to ORS 454.275 et seq., Department of Environmental Quality, January 30, 1986, and February 1986.

(22) The City of Gresham Waste Water Treatment Plant Facilities Plan, Brown and Caldwell, February 1985, Amended January 1986 by Black & Veatch.

(23) City of Gresham Mid-County Interceptor Sewers Facility Plan, Brown and Caldwell, May 1987.

The only change to the Plan is to Article 1, Section 3(E) where we should add an additional document;

(<u>24</u>) <u>Environmental Quality Commission, OAR 340-41-70, Special Policies and Guidelines to Improve Water Quality Within the Tualatin River Subbasin. Amended June 2, 1989.</u>

This support documentation shall be used as a standard of comparison by any person or organization proposing any facilities plan or action related to the provision of public facilities and services.

(F) Metro shall review state-approved facilities plans for compliance with the Regional Plan. Upon acknowledgment of compliance, the approved facilities plan shall be incorporated by amendment to the Regional Plan and all appropriate support documents pursuant to Section 9 of the Adoption and Implementation Ordinance.

ARTICLE II. BOUNDARY AND ALIGNMENT INTERPRETATION

SECTION 1. Boundaries and alignments appearing on maps contained in the Regional Wastewater Management Plan are of two types with respect to the level of specificity. They are:

(A) Type 1. Boundaries and alignments fully specified along identified geographic features such as rivers and roads or other described legal limits such as section lines and district boundaries.
Such boundaries and alignments appear on the Wastewater Management Maps as solid lines. Unless otherwise specified, where a Type 1 line is located along a geographic feature such as a road or river, the line shall be the center of that feature.

(B) Type 2. Boundaries and alignments not fully specified and not following identified geographic features. Such lines will be specified by local jurisdiction plans. Such lines appear on the Wastewater Management Maps as broken lines.

ARTICLE III. DEFINITIONS

Terms used in this text employ the definitions defined herein:

(A) Collector Sewers. The common lateral sewers, within a publicly owned treatment system, which are primarily installed to receive wastewater directly from facilities which convey wastewater from individual systems, or from private property.

(B) Combined Sewers. Sewers which are designed as sanitary sewers and storm sewers.

(C) Effluent. The liquid that comes out of a treatment works after completion of the treatment process.

(D) Facilities Plan. Necessary plans and studies which directly relate to the construction of treatment works. Said plans shall be equivalent to those prepared in accordance with Title II of the federal Clean Water Act.

(E) Interceptor. A sewer which is designed for one or more of the following purposes:

(i) To intercept wastewater from a final point in a collector sewer and convey such wastes directly to a treatment facility or another interceptor.

(ii) To replace an existing wastewater treatment facility and transport the wastes to an adjoining collector sewer or interceptor sewer for conveyance to a treatment plant.

(iii) To transport wastewater from one or more municipal collector sewers to another municipality or to a regional plant for treatment.

(iv) To intercept an existing major discharge of raw or inadequately treated wastewater for transport directly to another interceptor or to a treatment plant.

(F) Land Application. The application of sewer sludge or effluent onto or into the ground.

(G) Pollution. Such contamination or other alteration of the physical, chemical or biological properties of any waters of the state, including change in temperature, taste, color, turbidity, silt or odor of the waters, or such radioactive, toxic, or other substance into any waters of the state which either by itself or in connection with any other substance present, will or can reasonably be expected to create a public nuisance or render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic life or the habitat thereof.

(H) Storm Sewers. Sewers designed to carry only storm waters, surface run-off, street wash waters and drainage.

(I) Sewage. Water carried human or animal or industrial wastes; from residences, industrial and commercial establishments or other places; together with such groundwater infiltration and surface water as may be present.

(J) Sanitary Sewers. A system of pipes that collects and delivers sewage to treatment works or receiving streams.

(K) Sewage Sludge. The accummulated, suspended and settleable solids of sewage or wastewater, respectively, deposited in tanks or basins mixed with water to form a semi-liquid mass.

(L) Step 3 Construction Grant. Money for construction or rehabilitation of all or a portion of treatment works.

(M) Wastewater. The flow of used water. See definition of sewage.

(N) Treatment Works. Any devices and systems for the storage, treatment, recycling and reclamation of municipal sewage, domestic sewage, or liquid industrial wastes used to implement Title II of the federal Clean Water Act, or necessary to recycle or reuse water at the most economical cost over the design life of the works. These include intercepting sewers, outfall sewers, sewage collection systems, individual systems, pumping, power, and other equipment and their appurtenances; extensions,

improvement, remodeling, additions, and alterations thereof; elements essential to provide a reliable recycled supply such as standby treatment units and clear well facilities; and any works, including acquisition of the land that will be an integral part of the treatment process or is used for ultimate disposal of residues resulting from such treatment (including land for composting sludge, temporary storage of such compost and land used for the storage of treated wastewater in land treatment systems before land application), storing, treating, separating, or disposing of municipal waste or industrial waste, including waste in combined storm water and sanitary sewer systems.

(O) Wastewater. The flow of used water (see "Sewage").

(P) Wastewater Treatment Facility. Any treatment plants, intercepting sewers, outfall sewers, pumping, power and other equipment and their appurtenances; any works, including land that will be an integral part of the treatment process or is used for ultimate disposal of residues resulting from such treatment; or, any other method or system for preventing, abating, reducing, storing, treating, separating or disposing of municipal waste, including stormwater runoff, or industrial waste, waste in combined stormwater and sanitary sewer systems.

ARTICLE IV. AREAS OF RESPONSIBILITY

SECTION 1. TREATMENT AND TRANSMISSION SERVICE AREAS

(A) General. Geographical areas provided service by sewage treatment plants within the Metro region are designated on the Sewerage Treatment and Transmission Service Area Map, incorporated by reference herein. (Amendment No. 12)

(B) Policies. All planning and/or provision of service by each treatment plant must be consistent with the Sewerage Treatment and Transmission Service Area Map. (Amendment No. 12)

SECTION 2. COLLECTION SYSTEM SERVICE AREAS

(A) General. Geographical areas provided service by waste- water collection facilities of local agencies within the Metro region are designated on the Collection System Service Areas Map, and incorporated by reference herein.

(B) Policies. All local sewage collection planning and/or provision of service must be consistent with the Collection System Service Areas Map.

ARTICLE V. IMPLEMENTING AGENCIES

SECTION 1. MANAGEMENT AGENCIES

(A) Designated management agencies shall include the following:

(1) Operating agency, with the following authorities or responsibilities:

(a) Coordination with Metro during formulation, review and update of the Regional Wastewater Management Plan;

(b) Conducting facilities planning consistent with the terms and conditions of this Plan;

(c) Constructing, operating and maintaining waste treatment facilities as provided in this Plan, including its capital improvement program;

(d) Entering into any necessary cooperative arrangements for sewage treatment or sludge management to implement this Plan;

(e) Financing capital expenditures for waste treatment;

(f) Developing and implementing a system of just and equitable rates and charges pursuant to federal and state law;

(g) Implementing recommended systems development charges or connection fee

policies, if any; and

(h) Enacting, enforcing, or administering regulations or ordinances to implement non-structural controls.

(2) Planning agency: For the purposes of this section, planning shall be defined to include regional planning and comprehensive land use planning. Agencies and their intended planning functions are as follows:

(a) Local Management Agencies: Local management agencies, as defined in Article V, shall have responsibility for waste treatment management planning within the Metro region as follows:

(i) Coordination with Metro to ensure that facilities planning and management activities conform to the Regional Wastewater Management Plan;

(ii) Coordination with Metro and DEQ in the grant application, capital improvement programming, project prioritization and continuing planning process;

(iii) Preparation of master plans, capital improvement programs and project priority lists; and

(iv) Participation in a planning consortium to conduct 201 Step 1 facility planning for plant expansions within a designated Treatment System Study Area. Agencies affected by a proposed regional alternative shall form a consortium, deliberate and designate a lead agency to undertake an investigation of the regional alternative in light of any proposed non-regional plant expansion. Any such agency shall notify Metro of its intent to form a consortium. If, after 90 days of such notification a consortium has not been formed and a lead agency has not been designated, Metro shall assume the lead agency role, or designate a lead agency. If, by mutual agreement of the affected local jurisdictions and Metro, an extension of time is necessary, the 90-day time limit may be extended.

(b) Metropolitan Service District (Metro): Metro shall be designated as the planning agency for areawide waste treatment

management planning, within its boundaries[3] with responsibility for:

(i) Operating the continuing planning process or the process by which the Regional Wastewater Management Plan will be kept responsive to changing information, technology and economic conditions;

(ii) Maintaining coordination between:

(aa) All appropriate state agencies, including DEQ, on matters such as discharge permits, water quality standards and grant evaluation procedures; and the Water Resources Department, on matters such as contemplated needs and uses of water for pollution abatement;

(bb) All Metro Region Governmental jurisdictions on matters such as review of local agency grant applications and local agency plans for conformance to the Waste Treatment Management

[3]Ibid.

Component:

(iii) Designation of management agencies as required;

(iv) Carrying out or contracting for studies to identify water quality problems and recommended means of control;

(v) Receiving grants and other revenues for planning purposes;

(vi) Metro shall be responsible for comprehensive land use planning including waste treatment management planning under ORS 197; and

(vii) Metro shall have responsibility for developing and implementing plans for processing, treatment and disposal of solid waste within Metro's boundaries.

(c) Department of Environmental Quality (DEQ) shall have responsibility for waste treatment management planning within the Metro region in the following areas:

(i) Coordination with Metro to ensure that The Regional Wastewater Management Plan is in conformance with the Statewide (303e) Plan.

(ii) Coordination with Metro and local agencies to set grant and capital improvement priorities and administer grant programs.

(iii) Determination of statewide standards and regulations applicable to the Metro region.

(iv) Other areas as prescribed by state law.

(d) Water Resources Department (WRD); WRD shall have responsibility for determination of statewide water resources policies applicable to the Metro region.

(3) Regulatory agency: For the purposes of this section, regulation shall mean to identify problems and to develop and enforce consistent solutions to those problems. Agencies and their regulatory responsibilities for the Regional Wastewater Management Plan are as follows:

(a) Local Agencies: Regulation of waste treatment management through the enforcement of building code provisions, construction practices, sewer use regulations, zoning ordinances, land use

plans, pretreatment requirement (where appropriate), grant and loan conditions (where appropriate), and all other local regulations affecting water quality.

(b) Metropolitan Service District (Metro): Metro shall perform the following regulatory functions in the area of waste treatment management:

(i) Develop, enforce and implement the Regional Wastewater Management Plan by means of:

(aa) Review and coordination of grants and loans for waste treatment facilities.

(bb) Coordination with local and state agencies.

(ii) Ensure conformance of local wastewater planning to The Regional Waste Treatment Management Plan:

(iii) Regulation of all solid waste disposal and other functions as may be assumed by the Metro Council within Metro region.

(c) Department of Environmental Quality (DEQ): Regulatory functions of DEQ for

waste treatment management in the Metro region are as follows:

(i) Develop and monitor water quality standards consistent with state and federal regula- tions.

(ii) Control of the location, construction, modification and operation of discharging facilities through the discharge permit process and through administration of the state's water quality laws.

(iii) Review and approval of grants and loans for waste treatment facilities.

(iv) Other functions as provided by state law.

(d) Department of Agriculture (DA): The application of pesticides is within the regulatory powers of the DA pursuant to ORS 634.

(e) Department of Forestry (DF): The DF shall be responsible for the enforcement of the Forest Practices Act, ORS 527.

(f) Portland Metropolitan Area Local Government Boundary Commission (LGBC) or its successor organization: The LGBC is responsible for regulating sewer

extension policies outside local jurisdictional boundaries within the Metro region and for formation of new governmental entities.

(g) Water Resources Department (WRD): WRD shall control the quantity of water available for all beneficial uses including pollution abatement through administration of the state's water resources law (ORS Ch. 536 and 537).

(B) Designated management agencies and their classifications are listed below. Some designations are subject to resolution of Study Areas.

MANAGEMENT AGENCY CLASSIFICATIONS

Management Agency	Operating*	Planning	Regulatory
Beaverton	C	X	X
Cornelius	C	X	X
Durham		X	
Fairview	C	X	X
Forest Grove	C	X	X
Gladstone	C	X	X
Gresham	T,C	X	X
Happy Valley	C	X	X
Hillsboro	C	X	X
Johnson City	C	X	X
King City	C	X	X
Lake Oswego	T,C	X	X
Maywood Park	C	X	X
Milwaukie	C	X	X
Oregon City	C	X	X
Portland	T,C	X	X
Rivergrove	C	X	X
Sherwood	C	X	X
Tigard	C	X	X
Troutdale	T,C	X	X
Tualatin	C	X	X
West Linn	C	X	X
Wilsonville	T,C	X	X
Wood Village	C	X	X
Clackamas County		X	X
Multnomah County		X	X
Washington County		X	X
Clackamas County S.D.#1	T,C	X	X
Dunthorpe-Riverdale County S.D.	C	X	X
Tri-City Service District	T,C	X	X
West Hills S.D. #2	C	X	X
Oak Lodge Sanitary District	T,C	X	X
Unified Sewerage Agency	T,C	X	X
Metro	Solid Waste Facilities Only	X	X
State DEQ	NA	X	X
State Water Resources Department	NA	X	X
Department of Agriculture	NA	NA	X

*T = Treatment and/or Transmission System Operation
C = Collection System Operation
NA = Not Applicable

Management Agency	Operating*	Planning	Regulatory
Department of Forestry	NA	NA	X
Portland Metropolitan Area Local Government Boundary Commission	NA	NA	X

*T = Treatment and/or Transmission System Operation
C = Collection System Operation
NA = Not Applicable

SECTION 2. NON-DESIGNATED AGENCIES: Agencies not designated as management agencies are not eligible for federal water pollution control grants except as may be provided elsewhere in this Plan.

ADOPTED AMENDMENTS TO SUPPORT DOCUMENTS

On the following pages are a number of revisions and amendments to Volume I, Proposed Plan.

The revisions and amendments are published exactly as adopted, including the amendment or revision date. Text deleted is crossed out with hyphens. Text added is underlined. These notations will be carried forward in any further publications of the Support Documents (but not in the Text, Maps or Rules of the Regional Plan).

Page numbers shown on the following sheets are from Volume I, Proposed Plan.

Amendment No. 1: (General Amendment) Adopted October 2, 1980

In any Support Document referenced herein the use of Metro's, CRAG and Member Jurisdictions shall be interpreted as follows:

- CRAG read as Metro
- MSD read as Metro
- Member Jurisdiction read as Management Agency

Amendment No. 2: (Pg. 1-4) Adopted October 2, 1980

The methodologies used to derive these projections are presented in Technical Supplement 1, as follows:

- Appendix A. Population Projection Methodology
- Appendix B. Point Source Waste Flow Projection Methodology
- Appendix C. Sludge Volume Projection Methodology

Other elements of [CRAG's] Metro's Regional Transportation Plan will involve projecting population and employment. It is intended that the Regional Waste Treatment Management [Component] Plan be reviewed against these new projections as they are developed. The Regional Waste Treatment Management [Component] Plan is subject to amendment to achieve consistency with new adopted projections.

Amendment No. 3: (Pg. 2-11) Adopted October 2, 1980

Net energy consumption for the proposed plan is exceeded by only one of the eight alternatives considered. The reason for such high energy consumption is the assumption of continued use of heat treatment at Gresham for processing sludge into a form suitable for land application. Future 201 facilities planning for the Gresham treatment plant may result in abandoning heat treatment in favor of digestion. Such a change would significantly lower the net energy consumption of the proposed plan.

The proposed plan faces a potentially major problem: achieving cooperation and agreement among the Inverness (Multnomah County), Troutdale and Gresham sewerage agencies. Specifically, a difficulty may arise initially regarding abandoning the Inverness and Troutdale plants, and subsequently, regarding management and financing of the regionalized wastewater treatment facilities. A possible interim step to meet treatment needs would be the construction of the pump station and force main from Troutdale to Gresham to handle Troutdale's expected overflow. After this, financial details can be settled, the regional plant at Gresham can be built, and the Troutdale plant can be abandoned.

Interim expansions of the Troutdale and Gresham plants of 1.6 MGD and 6 MGD respectively as well as the interim expansion to the Inverness Plant planned by Multnomah County are recommended to insure continuity of sewerage service in those communities until more detailed engineering studies of the regional treatment alternative can be performed.

Amendment No. 4: (Pg. 2-17) Adopted: October 2, 1980

Interceptor System (Reference to Figure 2-12 changed to 2-14)

Figure 2-[12]14 shows the existing collection system and interceptors proposed for Hillsboro-East and -West and a proposed force main from North Plains.

Hillsboro's existing collection system is quite old in central areas of the City. Average wet weather flows frequently exceed twice the average dry weather flow. Figure 2-[12]14 shows how the northern area in the Urban Growth Boundary in the Hillsboro-West service area will be served by interceptor extensions previously planned by the City, and by additional extensions proposed in this study. For purposes of computing present worth costs, all new interceptors will be built in 1980.

The Hillsboro-East service area's existing interceptor system is also shown in figure 2-[12]14. No additional interceptors are needed to collect flows to the year 2000. Repair or

replacement of some existing interceptors may be needed, particularly to control infiltration/inflow that should be considered in facilities planning for the City.

North Plains is not sewered at present. Figure 2-[12]14 shows how the North Plains area will be served by an interceptor system.

Amendment No. 5: (PG. 2-19A + 2-19B) Adopted October 2, 1980

LAND TREATMENT

In land application, the effluent from treatment plants represents a potential resource, rather than a waste to be disposed of. While the sludge is generally incinerated, used in landfill or as fertilizer, the effluent stream is conventionally discharged to a nearby stream such as the Tualatin River. The remaining nutrients, solids, oxygen demanding toxic and pathogenic constituents in the effluent add to the pollution of the stream from natural sources from overland runoff and agricultural chemicals. Conditions are aggravated during the summer because of high water temperatures and low stream flow due to irrigation water withdrawals and a low stream recharge from groundwater, rather than from snow melt.

Elimination of all pollutant discharges into the nation's waters is a goal established by federal law. Technical alternatives to attain this goal are either advanced waste treatment facilities or land application of effluent. Advanced treatment normally requires large amounts of chemicals and energy and generates substantial amounts of chemical waste sludge which requires ultimate disposal.

Health and aesthetic considerations in regard to crop production, potential groundwater contamination and pathogens are major concerns in land application. However, intensive research over the past few years indicates that proper land application techniques, site selection and monitoring can prevent adverse effects. Most heavy metals are removed by absorption or precipitation in insoluble form within the first few feet of the soil. Removal efficiencies for nitrogen and coliform bacteria, after effluent passage through approximately five feet of soil are generally adequate to meet public health criteria for drinking water. Indications are that the quality of land renovated wastewater is nearly the same regardless of whether raw, primary or secondary effluence is applied.

The following summarizes the conclusions of this study in regard to land treatment technology and its application in

Tualatin basin:

- Land application keeps nutrients and pollutants out of the rivers and assists in the goal of zero pollutant discharge.

- Land application makes sewage treatment more reliable since effluents of widely varying quality are purified to high degree.

- Irrigation of farm crops appears to be the most suitable land application method in the Tualatin basin and probably in other areas of the CRAG Metro region.

- Nutrients and water of the effluent would be recycled into plant tissue and produce higher crop yields.

- Effluent should be collected only during the irrigation season, which coincides approximately with the low stream flow period, in order to reduce the necessary storage capacity.

- Public health concerns are related to potential transmission of pathogens to animal and man, to potential pollution of groundwater and to the quality of crops.

- Proper techniques can prevent health hazards. Public perceptions in regard to sewage effluent could be an essential factor.

- Irrigation on agency-owned land would simplify operations. However, irrigation on private farm land would require less capital expenditure, the land would remain on the county tax roll and opposition to government competition with private farming would be avoided. Irrigation on private farms appears to be the better plan.

- Revenue from the sale of effluent could reduce the cost of the system. There appears to be a good demand for supplemental irrigation water.

- Most farm land in the Tualatin basin could be made irrigable for wastewater application by building tile underdrains.

- Regulatory restrictions in regard to the type of crops raised with effluent irrigation could impede the acceptance of land application by private farmers.

- Energy use for pumping can be considerable. The possibility of gravity flow must be investigated case-by-case. However, the use of energy and other natural resources is probably less for land application than for alternative tertiary treatment.

- Forest irrigation and rapid infiltration ponds appear to be viable alternatives to crop irrigation in Multnomah and Clackamas Counties. The size of treatment plants in these counties, the type of solid and vegetable cover require that these alternatives be examined.

Recommendations: Actual detailed alternatives for the land application of effluents was initially done only for the treatment plants discharging into the Tualatin River in Washington County. This is where DEQ felt that the water quality problems were the most critical. However, based on the [new] completed 303e basin plan and results of the preliminary investigations in other areas of the CRAG Metro region, land treatment in Clackamas and Multnomah Counties [will be] has been studied and the results incorporated into this plan as [a portion of the continuing planning process] an addition to Technical Supplement 9.

[The following initial recommendations can be made:]

As a result of this study the following Recommendations can be made:

1. Sewage effluent should be applied to land only during the growing season (May to October). Large storage capacities would be required to store effluent generated during the winter months when land application is not feasible.

2. For the land application system to work to the treatment agency's advantage, the agency should purchase the land.

3. Except in the Damascus/Boring and Happy Valley areas, spray irrigation should be the method of land application. Although overland flow application is technically feasible for these areas, institutional and regulatory constraints make land application infeasible. Other methods of wastewater treatment should be investigated for the Damascus/Boring and Happy Valley study areas, since it appears that DEQ discharge regulations will not be relaxed in the future and will become more restrictive. Alternatives which still remain for these communities include advanced (tertiary) waste treatment facility construction or connection to a nearby sewerage system.

4. Application rates for effluent application should be set to dispose of effluent at the maximum rate which the crops will tolerate without losses, and, preferably, to optimize crop yields at the same time.

5. Alternative plans for land application of wastewater effluents should employ features recommended in (1) through (4) above, and should be evaluated against alternative plans for advanced waste treatment in the Multnomah and Clackamas Counties expanded study area.

6. The Oregon State Department of Environmental Quality should examine and revise the guidelines on pre-treatment for sewage utilized in land application throughout the state.

7. The use of lagoons followed by dry weather (summer) land application and wet weather (winter) river discharge should be utilized in the smaller outlying communities. This would comply with DEQ's effluent limitations on many of the area's smaller streams and rivers, especially in Multnomah and Clackamas Counties.

8. Portions of the Sandy and Estacada land application sites are showing signs of imminent subdivision, although currently in agricultural use. This potential conflict in land use should be reviewed by Metro.

Amendment No. 6: (Pg 2-22) Adopted October 2, 1980

Sludge Handling

(Deleted third sentence of first paragraph)

At both Wilsonville and Canby, aerobic sludge digestion facilities will be expanded as part of the independent wastewater treatment facilities expansions. Digested sludge will be trucked and applied to farmers' fields. [The two jurisdictions should share the costs of sludge trucking equipment.] Operation and maintenance costs of trucking equipment and costs associated with the management and monitoring the land application operation could also be shared. Sludge storage is available at the existing Canby humus ponds while storage at Wilsonville could be provided by reworking the existing drying beds into a lagoon.

Total capital expenditures for Wilsonville sludge handling are estimated to be $238,000. The 5-year capital outlay for sludge handling at Wilsonville will be $208,000. Capital expenditures for sludge handling at Canby total $165,000, while the 5-year capital outlay will be $30,000.

Advantages, Potential Problems and Variations

Independent operation of the treatment facilities and financing and operation of the proposed new facilities is the lowest-total-cost method for wastewater management in this region. It involves the simplest institutional form for management and financing, requiring virtually no change from the existing institutional arrangement.

Independent wastewater treatment at two plants has, for this region, a higher environmental compatibility than regionalization of treatment facilities at either of the treatment plants. Pipelines between the two communities will be needed for regionalization and will cause some disturbance to wildlife. Also, the proposed plan requires less energy in its operation than do alternative plans proposing greater regionalization.

This plan assumes that Barlow will be eventually served by Canby. Facilities planning should evaluate this assumption and possible alternative sewage disposal systems, such as septic tanks, for Barlow.

Staged development of treatment facilities may be to the advantage of either municipality and should be considered. Both communities should from time to time consider the economics of selling effluent for irrigation of local farms. This might offer some savings in the cost of operations and would lead to an improvement in Willamette River water quality, however small.

Amendment No. 7: (Pg 2-30) Adopted October 2, 1980

Total Runoff	1 Average Overflow 1954 to 1959	2 Storm of 8/25/56	Ratio 2/1
Total Overflows (ft^3)	694,000	4,061,000	5.85
Antecedent Dry Days[a]	2.45	76.9	31.26
Storm Duration (hr)	5.2	8.0	1.53
Sus-S (lb)	2,646	84,002	31.75
Set-S (lb)	2,278	74,067	32.51
BOD_5 (lb)	670	14,357	21.42
N (lb)	34	412	12.11
P (lb)	24	234	9.75
Coliforms[b] (MPN/100 ml)		0.575×10^6	1.238×10^6
2.15			

RECOMMENDATIONS

A complete plan for abatement of combined sewer overflows cannot begin until regulating bodies determine the effect of pollution from this source on receiving waters and issue standards of treatment or load limits. Recognizing that combined sewer overflows are a significant source of pollutants, however, and in light of DEQ's interim policy that pollution of nonpoint sources should not be allowed to increase, the following initial recommendations can be made:

- DEQ should remove the requirement to limit diversions to divert 3 times average dry weather (ADW) flow for individual basins in favor of a general standard for the whole system. This would allow the flexibility to capture and treat more flow from basins with higher pollutant loads (i.e., industrial and commercial areas) while diverting more than ADW flow from cleaner basins.

- [Development that would add to flows in sewerage subject to overflow should not be allowed until a plan for reduction of overflows is adopted.]

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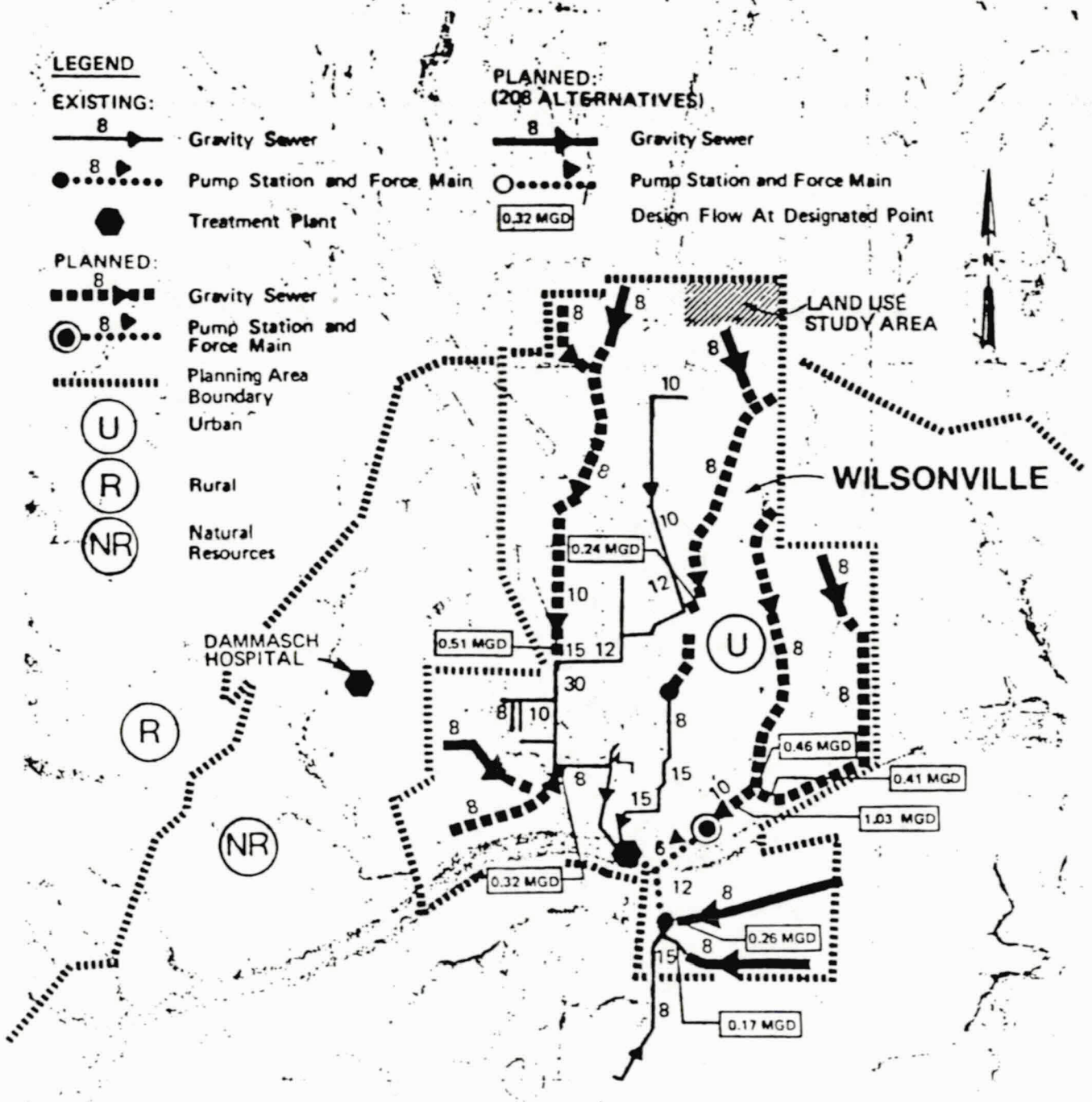
[a]Days of pollutant build-up not washed off by preceding storms.
[b]Average concentration for duration of the storm.

0141B/MH

Amendment No. 8: (pg. 2-69) Adopted October 2, 1980



Note: Incorrect mapping of gravity sewers on this map to be corrected upon receipt of information from City of Wilsonville. This mapping error shall not impair provision of sewerage service in any way.

FIGURE 2-17
WILSONVILLE
PROPOSED PLAN

STAFF REPORT

CONSIDERATION OF ORDINANCE NO. 89-317 FOR THE PURPOSE OF AMENDING METRO CODE CHAPTER 3.02, AMENDING THE REGIONAL WASTE TREATMENT MANAGEMENT PLAN AND SUBMITTING IT FOR RECERTIFICATION

Date: October 2, 1989 Presented by Larry Sprecher

FACTUAL ANALYSIS

On July 13, 1989 the Water Resources Management Policy Alternatives Committee (WRPAC) held it's annual meeting for the purpose of reviewing the Regional Waste Water Management Plan (attached) the following amendments were considered by the WRPAC. The amendments are map changes which reflect updated collection and transmission/treatment source areas, work plans and service agreements or text changes. Upgraded maps are attached.

Amendments to the Regional Wastewater Management Plan

Portland/Washington County

That portion of the Unified Sewerage Agency service area on the Sewerage Transmission which was designated as "USA Durham" is redesignated as a "Study Area". This area is the subject of a joint-study by Portland and the USA to determine the most effective way of providing sewerage service to the area.

Gresham

Three technical map changes to the Collection Systems Service Map to reflect service upgrade.

- InterLachen Road, between Gresham and Fairview
- In the vicinity of N.E. Halsey and 205th, between Gresham and Fairview
- At S.E. 175th and Haig, between Gresham and Portland.

Gladstone

The study area boundaries along Stanley Avenue between Willow Street and Locus Road are revised to reflect recent annexation and sewer construction.

Gladstone

The Sewerage Transmission and Treatment Map is changed to more accurately reflect the boundary between Clackamas Sewer District #1 and the Tri-City Sewer District.

Wilsonville

Technical map changes to reflect changes in the City's Sanitary Sewer Master Plan.

Tigard

Map changes to reflect changes in the city limit.

Beaverton

Map changes to reflect changes in the city limit.

BACKGROUND

The Federal Water Pollution Control Act of 1972 (Public Law 95-500), commonly known as the Clear Water Act, required the creation of a Regional Wastewater Management Plan, which was first adopted by the Metro Council in 1980. Since that time the Regional Plan has been periodically updated. The plan is now reviewed on an annual basis as part of Metro's continuing "208" Water Quality Program and was last amended December 1988.

The Clean Water Act requires that the Regional Plan accurately identify the regions water quality management problems and their solutions, both short-term and long-term. The Regional Plan must also delineate the regions water quality management service areas for collection, transmission and treatment of wastewater. Local jurisdictions are required to coordinate their plans with Metro and to comply with the Regional Plan prior to the allocation of Federal Funds for the construction or upgrading of any wastewater treatment facilities.

The Water Resources Policy Alternatives Committee (WRPAC) was appointed by the Metro Council to advise them and the Metro staff on matters relating to water resources management.

The WRPAC is composed of representatives of local jurisdictions, water related industries, and interested citizens.

The WRPAC meets annually to review the Regional Plan and to consider proposed changes and amendments. This year our meeting was held July 13, 1989 and a second is scheduled for October 18, 1989. THe changes and amendments are contained in the factual analysis section of the Staff Report.

Accompanying this Staff Report is a letter from the Executive Director reporting on various matters relating to Water Resources issues.

EXECUTIVE DIRECTOR'S RECOMMENDATION

The Executive Officer recommends the Council Adopt Ordinance 89-317.

INTERGOVERNMENTAL RELATIONS COMMITTEE
REPORT

ORDINANCE NO. 89-317, AMENDING THE WASTE TREATMENT MANAGEMENT PLAN AND SUBMITTING IT FOR RECERTIFICATION

Date: November 2, 1989 Presented by: Councilor Gardner

COMMITTEE RECOMMENDATION: At its October 24, 1989 meeting, the Committee voted unanimously to recommend Council adoption of Ordinance No. 89-317. In attendance were Councilors Bauer, Collier, DeJardin, Devlin and myself.

COMMITTEE DISCUSSION/ISSUES: Planning and Development Department staff (Messrs. Lee and Sprecher) presented the staff report. They indicated that this Ordinance is the annual update of the Regional Wastewater Management Plan which is required by the Federal Clean Water Act (Public Law 95-500). The proposed changes to the Wastewater Management Plan are a result of meetings with the District's Water Resources Policy Alternates Committee (WRPAC) and are minor and technical in nature. They are mostly map changes delineating adjusted service areas.

Mr. Sprecher reviewed some of the major programs underway throughout the region and indicated that there may be more substantial changes to the plan next year as a result of the District's work in the water policy area.

JG:DEC:aeb

A:\IGRRPT.112

Regional Waste Treatment Management Plan

(1989 Proposed Update)

October 1989

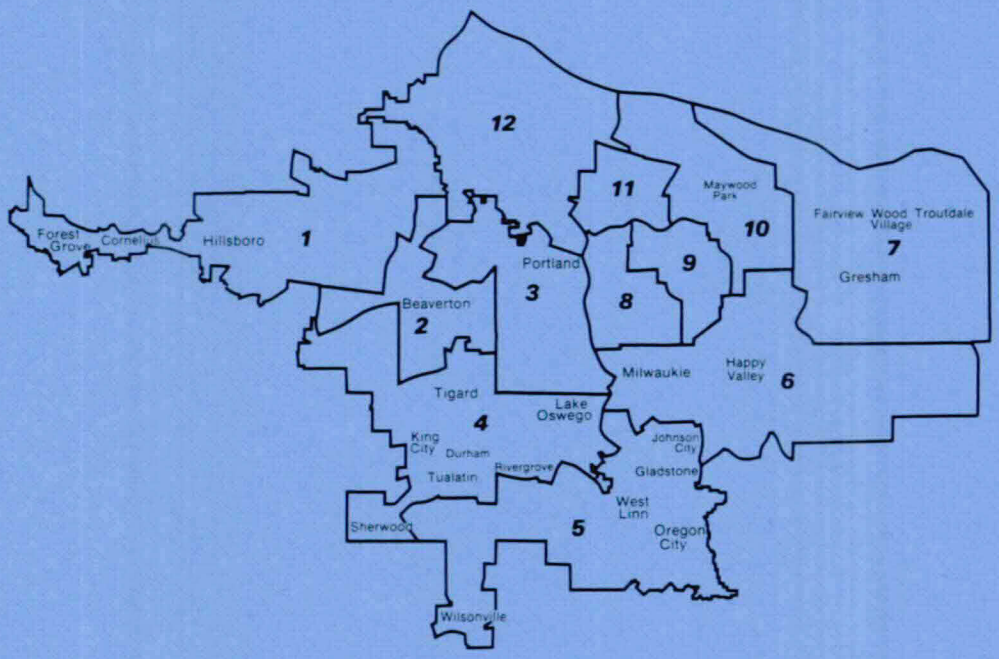
METRO

The Metropolitan Service District, your regional government, handles regionwide concerns in the urban areas of Clackamas, Multnomah and Washington counties. Metro is responsible for solid waste management, operation of the Metro Washington Park Zoo and the Oregon Convention Center, transportation and land-use planning, urban growth boundary management and technical services to local governments.

Executive officer
Rena Cusma

Councilors by district are:

District 1	Mike Ragsdale
District 2	Lawrence Bauer
District 3	Jim Gardner
District 4	Richard Devlin
District 5	Tom DeJardin
District 6	George Van Bergen
District 7	Ruth McFarland
District 8	Judy Wyers
District 9	Tanya Collier
District 10	Roger Buchanan
District 11	David Knowles
District 12	Gary Hansen



First printing
89401

Regional Waste Treatment Management Plan

(1989 Proposed Update)

October 1989

METRO

I. Adoption & Implementation Ordinance

STAFF REPORT

CONSIDERATION OF ORDINANCE NO. 89-317 FOR THE PURPOSE OF AMENDING METRO CODE CHAPTER 3.02, AMENDING THE REGIONAL WASTE TREATMENT MANAGEMENT PLAN AND SUBMITTING IT FOR RECERTIFICATION

Date: October 2, 1989 Presented by Larry Sprecher

FACTUAL ANALYSIS

On July 13, 1989 the Water Resources Management Policy Alternatives Committee (WRPAC) held it's annual meeting for the purpose of reviewing the Regional Waste Water Management Plan (attached) the following amendments were considered by the WRPAC. The amendments are map changes which reflect updated collection and transmission/treatment source areas, work plans and service agreements or text changes. Upgraded maps are attached.

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The Clean Water Act requires that the Regional Plan accurately identify the regions water quality management problems and their solutions, both short-term and long-term. The Regional Plan must also delineate the regions water quality management service areas for collection, transmission and treatment of wastewater. Local jurisdictions are required to coordinate their plans with Metro and to comply with the Regional Plan prior to the allocation of Federal Funds for the construction or upgrading of any wastewater treatment facilities.

The Water Resources Policy Alternatives Committee (WRPAC) was appointed by the Metro Council to advise them and the Metro staff on matters relating to water resources management.

The WRPAC is composed of representatives of local jurisdictions, water related industries, and interested citizens.

The WRPAC meets annually to review the Regional Plan and to consider proposed changes and amendments. This year our meeting was held July 13, 1989 and a second is scheduled for October 18, 1989. THe changes and amendments are contained in the factual analysis section of the Staff Report.

Accompanying this Staff Report is a letter from the Executive Director reporting on various matters relating to Water Resources issues.

EXECUTIVE DIRECTOR'S RECOMMENDATION

The Executive Officer recommends the Council Adopt Ordinance 89-317.

METRO

2000 SW First Avenue
Portland, OR 97201-5398
(503) 221-1646
Fax 241-7417

October 2, 1989

Honorable Presiding Officer and Councilors:

The accompanying Staff Report lists the changes to Metro's Regional Wastewater Management Plan which were introduced at the July 13, 1989 meeting of the Water Resources Policy Alternative Committee. The annual update of the plan is designed to provide a "snapshot" of the situation as it exists on July 1st of the year. The technical changes contained in the Staff Report do just that. However, a number of significant things have occurred since that time and we would be remiss if we did not bring them to your attention so that you might be aware of the "Bigger Picture" as it relates to Water Quality.

As part of the 1989-90 annual budget you authorized the funding of a Senior Management Analyst position to deal with water policy analysis. That position was filled on August 1, 1989. On September 14, 1989 you authorized a position of Associate Management Analyst to also deal with water policy analysis and that position will be filled on October 16, 1989.

On July 27, 1989 you reviewed the Water Quality Issues Report prepared by the Planning and Development Department and adopted as subjects for further consideration the Potential Water Quality Policy Directions contained in the report.

The Water Policy Analysis staff is presently engaged in gathering information concerning water quality issues and programs through the process of a lengthy series of meetings with local jurisdictions (counties, cities and special districts), state and federal agencies and a number of organizations and individuals interested in water quality issues. A report of the results of this reconnaissance will be issued shortly.

In addition, various agencies within the Metro area have been at work on a variety of sub-regional responses to water quality problems.

In Washington County; the United Sewerage Agency has formed a Surface Water Management Authority and is in the process of completing a non-point source watershed management plan. The Water Management Committee of Washington County or WAMCO, has adopted a Water Resources Management Plan which proposes formation of a county-wide water authority to integrate water supply and water distribution in an overall water resources management program.

In Clackamas County, Clackamas County Staff and the Public Water Systems in Clackamas County, working with the State Health Department have completed a study identifying critical issues in the Clackamas Watershed. Clackamas County and the cities of Lake Oswego and West Linn have signed an agreement with the Unified Sewerage Agency to participate in a study of the steps necessary to improve water quality in the Tualatin River.

In Multnomah County, the Portland Bureau of Environmental Services has completed the Background Report and the Management Alternative Evaluation for the Columbia Slough. The Portland Water Bureau has commenced a large scale, long-range study concerning future water needs, systems improvements and the Bureau's role within the region.

All of these efforts involve a considerable expenditure of effort and a high degree of inter-agency cooperation which speaks well for the ability of the region to respond to the numerous problems facing us now and in the future in the water resources area.

Metro looks forward to playing a significant and active role in the planning efforts necessary to solve those problems.

One small but necessary step in that effort is the adoption of Ordinance No. 89-317 which is hereby recommended to you for adoption.

Sincerely,

Rena Cusma
Executive Officer

BEFORE THE COUNCIL OF THE
METROPOLITAN SERVICE DISTRICT

FOR THE PURPOSE OF AMENDING METRO CODE CHAPTER 3.02, AMENDING THE REGIONAL WASTE TREATMENT MANAGEMENT PLAN AND SUBMITTING IT FOR RECERTIFICATION	)))))	ORDINANCE NO. 89-317

WHEREAS, Metropolitan Service District Code Section 3.02.008(a) and (b) set forth criteria for the continuing planning process to implement the Regional Wastewater Management Plan (Regional Plan) and for amending support documents and maps; and

WHEREAS, The Water Resources Policy Alternatives Committee met on October 18, 1989, and recommends Council adoption of amendments; and

WHEREAS, Amendments needed to update the Regional Plan are based on new information from each of the 24 cities, three counties and Unified Sewerage Agency in Washington County showing updated local plans, maps and service agreements, and conformance of local plans with the Regional Plan; and

WHEREAS, If the Regional Plan is amended by the Council of the Metropolitan Service District, the Regional Plan will be subbmitted to the Oregon Environmental Quality Commission and Department of Environmental Quality and, in turn, to the U.S. Environmental Protection Agency for recertification; and

THE COUNCIL OF THE METROPOLITAN SERVICE DISTRICT HEREBY ORDAINS:

Section 1. The Regional Wastewater Management Plan Text and Maps (Collection System Service Areas Map, adopted December 22, 1988, and Transmission and Treatment Service Areas Map, December 22, 1988, 1897), referred to in Metro Code Section 3.02.002, are amended to read as shown in attached Exhibit A, which is hereby incorporated by reference and made a part of this Ordinance.

Section 2. The Council of the Metropolitan Service District hereby authorizes the Executive Officer to submit the Regional Plan, as amended, to the Oregon Environmental Quality and, in turn, to the U.S. Environmental Protection Agency for recertification.

ADOPTED by the Council of the Metropolitan Service District this __ _____ day of _____, 1989.

_____
Mike Ragsdale, Presiding Officer

ATTEST:

_____
Clerk of the Council

II. Text

REGIONAL WASTEWATER MANAGEMENT PLAN

1988

TABLE OF CONTENTS

REGIONAL WASTEWATER MANAGEMENT PLAN

TEXT

ARTICLE I. INTENT AND POLICIES

SECTION 1. INTENT: The Regional Wastewater Management Plan is intended to:

(A) Address and implement portions of ORS 268.390 Planning for Activities and areas with Metropolitan impact; Review of local plans; urban growth boundary. A district council shall:

> "(1) Define and apply a planning procedure which identifies and designates areas and activi- ties having significant impact upon the orderly and responsible development of the Metropolitan area, including, but not limited to, impact on:
> . . . (b) Water quality . . .
> (2) Prepare and adopt functional plans for those areas designated under Subsection (1) of this section to control metropolitan area impact on air and water quality. . . ."

(B) Address portions of State Planning Goals #6 (Air, Water and Land Quality) and #11 (Public Facilities and Services).

(C) Establish a structure within which staging of regional wastewater management facilities for a minimum of twenty (20) years can be accomplished by local jurisdictions in conformance with the State Planning Goals.

(D) Provide a means for coordination of this Plan with regional and local jurisdiction plans.

(E) Allow establishment of a priority-setting structure for water quality needs within the Metro region.

SECTION 2. ASSUMPTIONS: The Regional Wastewater Management Plan is based upon the following assumptions:

(A) Publicly-owned wastewater management facilities will serve only those geographical areas as defined in the maps included as Part III of this plan.

(B) All wastewater facilities will be designed and operated in conformance with regional, state and federal water quality standards and regulations, and with due consideration for the groundwater resources of the area.

(C) Identification of a local jurisdiction's responsibility to provide wastewater management facilities in a geographical area will not be construed as a requirement to provide immediate public services.

(D) Any land use related action or any action related to development or provision of a public facility or service may be reviewed by the Metro Council for consistency with this Plan. The Metro Council will accept for review only actions which are of regional significance or which concern areas or activities of significant regional impact.

(E) The control of waste and process discharges from privately-owned industrial wastewater facilities not discharging to a public sewer is the responsibility of the State of Oregon.

(F) Because the need for wastewater treatment facilities is based on population, employment and waste load projections which cannot be estimated with certainty, use of such projections must be limited to a best effort evaluation. To ensure that these projections are sufficiently reliable, a monitoring process will be established to regularly compare the projected values with both actual values and new projections as they are produced by Metro studies. The projections are subject to revision to achieve consistency with actual conditions and new adopted projections in accordance with the Rules, Section 8, Continuing Planning Process.

SECTION 3. POLICIES AND PROCEDURES: The Regional Wastewater Management Plan includes the following policies and procedures:

(A) The Regional Wastewater Management Plan will be reviewed and updated annually. The timing, schedule and submission of this review and update shall be in compliance with the "recertification" procedures established by the Oregon Department of Environmental Quality and the U.S. Environmental Protection Agency. (Amendment No. 15, Ordinance No. 84-184)

(B) Projects receiving review under Executive Order No. 12372 shall be given positive comment only if in conformance with this Plan.

(C) Treatment plants shall be programmed for

modification only when one or more of the following conditions will exist:

(1) Dry weather flow exceeds plant capacity;

(2) Life of plant is reached;

(3) Wet weather flow exceeds plant capacity and I/I study results indicate wet weather flow should be treated;

(4) Organic loadings reach critical stage in plant opera- tion as determined by the Oregon Department of Environmental Quality;

(5) Facility Plan underway at the time of adoption of Part I of this Element;

(6) Metro Council determines modification to be necessary;

(7) Effluent flows result in an adverse effect on groundwater resources; or

(8) New treatment standards are adopted.

(D) Operating agencies, so designated by Part I of this Plan, shall conduct or provide such services as are mutually agreed upon with all management agencies which provide services to the same geo- graphical area.

(E) The Regional Wastewater Management Plan is based on a large body of information, including technical data, observations, findings, analysis and conclusions, which is documented in the following reports:

(1) Volume 1--Proposed Plan as amended by

amendments 1 through 8 adopted October 2, 1980.

(2) Volume 2--Planning Process.

(3) Technical Supplement 1--Planning Constraints.

(4) Technical Supplement 2--Water Quality Aspects of Combined Sewer Overflows, Portland, Oregon.

(5) Technical Supplement 3--Water Quality Aspects of Urban Stormwater Runoff, Portland, Oregon.

(6) Technical Supplement 4--Analysis of Urban Stormwater Quality from Seven Basins Near Portland, Oregon.

(7) Technical Supplement 5--Oxygen Demands in the Willamette.

(8) Technical Supplement 6--Improved Water Quality in the Tualatin River, Oregon, Summer 1976.

(9) Technical Supplement 7--Characterization of Sewage Waste for Land Disposal Near Portland, Oregon.

(10) Technical Supplement 8--Sludge Management Study.

(11) Technical Supplement 9--Sewage Treatment Through Land Application of Effluents in the Tualatin River Basin and Supplemental Report, Land Application of Sewage Effluents

Clackamas and Multnomah Counties.[1]

Portland-Vancouver Metropolitan Area Water Resources Study, U. S. Army Corps of Engineers, 1979.[2]

(12) Technical Supplement 10--Institutional, Financial and Regulatory Aspects.

(13) Technical Supplement 11--Public Involvement.

(14) Technical Supplement 12--Continuing Planning Process.

(15) Technical Supplement 13--Storm Water Management Design Manual.

(16) City of Gresham Sewerage System Master Plan, Brown and Caldwell, December 1980. (Amendment No. 14, Ordinance No. 84-184)

(17) Sewerage System Facility Plan for the I-205 Corridor and the Johnson Creek Basin, City of Portland, Oregon, Bureau of Environmental Services, June 1984. (Amendment No. 14, Ordinance No. 84-184)

(18) Sewerage Master Plan Update, Central County Service District No. 3, Multnomah County, Oregon, Kramer, Chin & Mayo, Inc., July 1983.

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[1]The Department of Environmental Quality shall assume responsibility for those portions of the CRAG "208" Study Area outside the boundaries of the Metropolitan Service District.

[2]Ibid.

(Amendment No. 14, Ordinance No. 84-184)

(19) Mid-Multnomah County Sewer Implementation Plan, CH2M HILL, September 1985.

(20) Findings and Order In the Matter of the proposal to Declare a Threat to Drinking Water in a Specially Defined Area in Mid-Multnomah County Pursuant to ORS 454.275 et. seq., Environmental Quality Commission, as ordered on April 25, 1986

(21) Evaluation of Hearing Record for proposal to Declare a Threat to Drinking Water in a Specifically Defined Area of Mid-Multnomah County Pursuant to ORS 454.275 et seq., Department of Environmental Quality, January 30, 1986, and February 1986.

(22) The City of Gresham Waste Water Treatment Plant Facilities Plan, Brown and Caldwell, February 1985, Amended January 1986 by Black & Veatch.

(23) City of Gresham Mid-County Interceptor Sewers Facility Plan, Brown and Caldwell, May 1987.

The only change to the Plan is to Article 1, Section 3(E) where we should add an additional document;

(<u>24</u>) <u>Environmental Quality Commission, OAR 340-41-70, Special Policies and Guidelines to Improve Water Quality Within the Tualatin River Subbasin. Amended June 2, 1989.</u>

This support documentation shall be used as a standard of comparison by any person or organization proposing any facilities plan or action related to the provision of public facilities and services.

(F) Metro shall review state-approved facilities plans for compliance with the Regional Plan. Upon acknowledgment of compliance, the approved facilities plan shall be incorporated by amendment to the Regional Plan and all appropriate support documents pursuant to Section 9 of the Adoption and Implementation Ordinance.

ARTICLE II. BOUNDARY AND ALIGNMENT INTERPRETATION

SECTION 1. Boundaries and alignments appearing on maps contained in the Regional Wastewater Management Plan are of two types with respect to the level of specificity. They are:

(A) Type 1. Boundaries and alignments fully specified along identified geographic features such as rivers and roads or other described legal limits such as section lines and district boundaries.

Such boundaries and alignments appear on the Wastewater Management Maps as solid lines. Unless otherwise specified, where a Type 1 line is located along a geographic feature such as a road or river, the line shall be the center of that feature.

(B) Type 2. Boundaries and alignments not fully specified and not following identified geographic features. Such lines will be specified by local jurisdiction plans. Such lines appear on the Wastewater Management Maps as broken lines.

ARTICLE III. DEFINITIONS

Terms used in this text employ the definitions defined herein:

(A) Collector Sewers. The common lateral sewers, within a publicly owned treatment system, which are primarily installed to receive wastewater directly from facilities which convey wastewater from individual systems, or from private property.

(B) Combined Sewers. Sewers which are designed as sanitary sewers and storm sewers.

(C) Effluent. The liquid that comes out of a treatment works after completion of the treatment process.

(D) Facilities Plan. Necessary plans and studies which directly relate to the construction of treatment works. Said plans shall be equivalent to those prepared in accordance with Title II of the federal Clean Water Act.

(E) Interceptor. A sewer which is designed for one or more of the following purposes:

(i) To intercept wastewater from a final point in a collector sewer and convey such wastes directly to a treatment facility or another interceptor.

(ii) To replace an existing wastewater treatment facility and transport the wastes to an adjoining collector sewer or interceptor sewer for conveyance to a treatment plant.

(iii) To transport wastewater from one or more municipal collector sewers to another municipality or to a regional plant for treatment.

(iv) To intercept an existing major discharge of raw or inadequately treated wastewater for transport directly to another interceptor or to a treatment plant.

(F) Land Application. The application of sewer sludge or effluent onto or into the ground.

(G) Pollution. Such contamination or other alteration of the physical, chemical or biological properties of any waters of the state, including change in temperature, taste, color, turbidity, silt or odor of the waters, or such radioactive, toxic, or other substance into any waters of the state which either by itself or in connection with any other substance present, will or can reasonably be expected to create a public nuisance or render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic life or the habitat thereof.

(H) Storm Sewers. Sewers designed to carry only storm waters, surface run-off, street wash waters and drainage.

(I) Sewage. Water carried human or animal or industrial wastes; from residences, industrial and commercial establishments or other places; together with such groundwater infiltration and surface water as may be present.

(J) Sanitary Sewers. A system of pipes that collects and delivers sewage to treatment works or receiving streams.

(K) Sewage Sludge. The accummulated, suspended and settleable solids of sewage or wastewater, respectively, deposited in tanks or basins mixed with water to form a semi-liquid mass.

(L) Step 3 Construction Grant. Money for construction or rehabilitation of all or a portion of treatment works.

(M) Wastewater. The flow of used water. See definition of sewage.

(N) Treatment Works. Any devices and systems for the storage, treatment, recycling and reclamation of municipal sewage, domestic sewage, or liquid industrial wastes used to implement Title II of the federal Clean Water Act, or necessary to recycle or reuse water at the most economical cost over the design life of the works. These include intercepting sewers, outfall sewers, sewage collection systems, individual systems, pumping, power, and other equipment and their appurtenances; extensions,

improvement, remodeling, additions, and alterations thereof; elements essential to provide a reliable recycled supply such as standby treatment units and clear well facilities; and any works, including acquisition of the land that will be an integral part of the treatment process or is used for ultimate disposal of residues resulting from such treatment (including land for composting sludge, temporary storage of such compost and land used for the storage of treated wastewater in land treatment systems before land application), storing, treating, separating, or disposing of municipal waste or industrial waste, including waste in combined storm water and sanitary sewer systems.

(O) Wastewater. The flow of used water (see "Sewage").

(P) Wastewater Treatment Facility. Any treatment plants, intercepting sewers, outfall sewers, pumping, power and other equipment and their appurtenances; any works, including land that will be an integral part of the treatment process or is used for ultimate disposal of residues resulting from such treatment; or, any other method or system for preventing, abating, reducing, storing, treating, separating or disposing of municipal waste, including stormwater runoff, or industrial waste, waste in combined stormwater and sanitary sewer systems.

ARTICLE IV. AREAS OF RESPONSIBILITY

SECTION 1. TREATMENT AND TRANSMISSION SERVICE AREAS

(A) General. Geographical areas provided service by sewage treatment plants within the Metro region are designated on the Sewerage Treatment and Transmission Service Area Map, incorporated by reference herein. (Amendment No. 12)

(B) Policies. All planning and/or provision of service by each treatment plant must be consistent with the Sewerage Treatment and Transmission Service Area Map. (Amendment No. 12)

SECTION 2. COLLECTION SYSTEM SERVICE AREAS

(A) General. Geographical areas provided service by waste- water collection facilities of local agencies within the Metro region are designated on the Collection System Service Areas Map, and incorporated by reference herein.

(B) Policies. All local sewage collection planning and/or provision of service must be consistent with the Collection System Service Areas Map.

ARTICLE V. IMPLEMENTING AGENCIES

SECTION 1. MANAGEMENT AGENCIES

(A) Designated management agencies shall include the following:

(1) Operating agency, with the following authorities or responsibilities:

(a) Coordination with Metro during formulation, review and update of the Regional Wastewater Management Plan;

(b) Conducting facilities planning consistent with the terms and conditions of this Plan;

(c) Constructing, operating and maintaining waste treatment facilities as provided in this Plan, including its capital improvement program;

(d) Entering into any necessary cooperative arrangements for sewage treatment or sludge management to implement this Plan;

(e) Financing capital expenditures for waste treatment;

(f) Developing and implementing a system of just and equitable rates and charges pursuant to federal and state law;

(g) Implementing recommended systems development charges or connection fee

policies, if any; and

(h) Enacting, enforcing, or administering regulations or ordinances to implement non-structural controls.

(2) Planning agency: For the purposes of this section, planning shall be defined to include regional planning and comprehensive land use planning. Agencies and their intended planning functions are as follows:

(a) Local Management Agencies: Local management agencies, as defined in Article V, shall have responsibility for waste treatment management planning within the Metro region as follows:

(i) Coordination with Metro to ensure that facilities planning and management activities conform to the Regional Wastewater Management Plan;

(ii) Coordination with Metro and DEQ in the grant application, capital improvement programming, project prioritization and continuing planning process;

(iii) Preparation of master plans, capital improvement programs and project priority lists; and

(iv) Participation in a planning consortium to conduct 201 Step 1 facility planning for plant expansions within a designated Treatment System Study Area. Agencies affected by a proposed regional alternative shall form a consortium, deliberate and designate a lead agency to undertake an investigation of the regional alternative in light of any proposed non-regional plant expansion. Any such agency shall notify Metro of its intent to form a consortium. If, after 90 days of such notification a consortium has not been formed and a lead agency has not been designated, Metro shall assume the lead agency role, or designate a lead agency. If, by mutual agreement of the affected local jurisdictions and Metro, an extension of time is necessary, the 90-day time limit may be extended.

(b) Metropolitan Service District (Metro): Metro shall be designated as the planning agency for areawide waste treatment

management planning, within its boundaries[3] with responsibility for:

(i) Operating the continuing planning process or the process by which the Regional Wastewater Management Plan will be kept responsive to changing information, technology and economic conditions;

(ii) Maintaining coordination between:

(aa) All appropriate state agencies, including DEQ, on matters such as discharge permits, water quality standards and grant evaluation procedures; and the Water Resources Department, on matters such as contemplated needs and uses of water for pollution abatement;

(bb) All Metro Region Governmental jurisdictions on matters such as review of local agency grant applications and local agency plans for conformance to the Waste Treatment Management

[3]Ibid.

Component:

(iii) Designation of management agencies as required;

(iv) Carrying out or contracting for studies to identify water quality problems and recommended means of control;

(v) Receiving grants and other revenues for planning purposes;

(vi) Metro shall be responsible for comprehensive land use planning including waste treatment management planning under ORS 197; and

(vii) Metro shall have responsibility for developing and implementing plans for processing, treatment and disposal of solid waste within Metro's boundaries.

(c) Department of Environmental Quality (DEQ) shall have responsibility for waste treatment management planning within the Metro region in the following areas:

(i) Coordination with Metro to ensure that The Regional Wastewater Management Plan is in conformance with the Statewide (303e) Plan.

(ii) Coordination with Metro and local agencies to set grant and capital improvement priorities and administer grant programs.

(iii) Determination of statewide standards and regulations applicable to the Metro region.

(iv) Other areas as prescribed by state law.

(d) Water Resources Department (WRD); WRD shall have responsibility for determination of statewide water resources policies applicable to the Metro region.

(3) Regulatory agency: For the purposes of this section, regulation shall mean to identify problems and to develop and enforce consistent solutions to those problems. Agencies and their regulatory responsibilities for the Regional Wastewater Management Plan are as follows:

(a) Local Agencies: Regulation of waste treatment management through the enforcement of building code provisions, construction practices, sewer use regulations, zoning ordinances, land use

plans, pretreatment requirement (where appropriate), grant and loan conditions (where appropriate), and all other local regulations affecting water quality.

(b) Metropolitan Service District (Metro): Metro shall perform the following regulatory functions in the area of waste treatment management:

(i) Develop, enforce and implement the Regional Wastewater Management Plan by means of:

(aa) Review and coordination of grants and loans for waste treatment facilities.

(bb) Coordination with local and state agencies.

(ii) Ensure conformance of local wastewater planning to The Regional Waste Treatment Management Plan:

(iii) Regulation of all solid waste disposal and other functions as may be assumed by the Metro Council within Metro region.

(c) Department of Environmental Quality (DEQ): Regulatory functions of DEQ for

waste treatment management in the Metro region are as follows:

(i) Develop and monitor water quality standards consistent with state and federal regula- tions.

(ii) Control of the location, construction, modification and operation of discharging facilities through the discharge permit process and through administration of the state's water quality laws.

(iii) Review and approval of grants and loans for waste treatment facilities.

(iv) Other functions as provided by state law.

(d) Department of Agriculture (DA): The application of pesticides is within the regulatory powers of the DA pursuant to ORS 634.

(e) Department of Forestry (DF): The DF shall be responsible for the enforcement of the Forest Practices Act, ORS 527.

(f) Portland Metropolitan Area Local Government Boundary Commission (LGBC) or its successor organization: The LGBC is responsible for regulating sewer

extension policies outside local jurisdictional boundaries within the Metro region and for formation of new governmental entities.

(g) Water Resources Department (WRD): WRD shall control the quantity of water available for all beneficial uses including pollution abatement through administration of the state's water resources law (ORS Ch. 536 and 537).

(B) Designated management agencies and their classifications are listed below. Some designations are subject to resolution of Study Areas.

MANAGEMENT AGENCY CLASSIFICATIONS

Management Agency	Operating*	Planning	Regulatory
Beaverton	C	X	X
Cornelius	C	X	X
Durham		X	
Fairview	C	X	X
Forest Grove	C	X	X
Gladstone	C	X	X
Gresham	T,C	X	X
Happy Valley	C	X	X
Hillsboro	C	X	X
Johnson City	C	X	X
King City	C	X	X
Lake Oswego	T,C	X	X
Maywood Park	C	X	X
Milwaukie	C	X	X
Oregon City	C	X	X
Portland	T,C	X	X
Rivergrove	C	X	X
Sherwood	C	X	X
Tigard	C	X	X
Troutdale	T,C	X	X
Tualatin	C	X	X
West Linn	C	X	X
Wilsonville	T,C	X	X
Wood Village	C	X	X
Clackamas County		X	X
Multnomah County		X	X
Washington County		X	X
Clackamas County S.D.#1	T,C	X	X
Dunthorpe-Riverdale County S.D.	C	X	X
Tri-City Service District	T,C	X	X
West Hills S.D. #2	C	X	X
Oak Lodge Sanitary District	T,C	X	X
Unified Sewerage Agency	T,C	X	X
Metro	Solid Waste Facilities Only	X	X
State DEQ	NA	X	X
State Water Resources Department	NA	X	X
Department of Agriculture	NA	NA	X

*T = Treatment and/or Transmission System Operation
C = Collection System Operation
NA = Not Applicable

Management Agency	Operating*	Planning	Regulatory
Department of Forestry	NA	NA	X
Portland Metropolitan Area Local Government Boundary Commission	NA	NA	X

*T = Treatment and/or Transmission System Operation
C = Collection System Operation
NA = Not Applicable

SECTION 2. NON-DESIGNATED AGENCIES: Agencies not designated as management agencies are not eligible for federal water pollution control grants except as may be provided elsewhere in this Plan.

ADOPTED AMENDMENTS TO SUPPORT DOCUMENTS

On the following pages are a number of revisions and amendments to Volume I, Proposed Plan.

The revisions and amendments are published exactly as adopted, including the amendment or revision date. Text deleted is crossed out with hyphens. Text added is underlined. These notations will be carried forward in any further publications of the Support Documents (but not in the Text, Maps or Rules of the Regional Plan).

Page numbers shown on the following sheets are from Volume I, Proposed Plan.

Amendment No. 1: (General Amendment) Adopted October 2, 1980

In any Support Document referenced herein the use of Metro's, CRAG and Member Jurisdictions shall be interpreted as follows:

- CRAG read as Metro
- MSD read as Metro
- Member Jurisdiction read as Management Agency

Amendment No. 2: (Pg. 1-4) Adopted October 2, 1980

The methodologies used to derive these projections are presented in Technical Supplement 1, as follows:

- Appendix A. Population Projection Methodology
- Appendix B. Point Source Waste Flow Projection Methodology
- Appendix C. Sludge Volume Projection Methodology

Other elements of [CRAG's] Metro's Regional Transportation Plan will involve projecting population and employment. It is intended that the Regional Waste Treatment Management [Component] Plan be reviewed against these new projections as they are developed. The Regional Waste Treatment Management [Component] Plan is subject to amendment to achieve consistency with new adopted projections.

Amendment No. 3: (Pg. 2-11) Adopted October 2, 1980

Net energy consumption for the proposed plan is exceeded by only one of the eight alternatives considered. The reason for such high energy consumption is the assumption of continued use of heat treatment at Gresham for processing sludge into a form suitable for land application. Future 201 facilities planning for the Gresham treatment plant may result in abandoning heat treatment in favor of digestion. Such a change would significantly lower the net energy consumption of the proposed plan.

The proposed plan faces a potentially major problem: achieving cooperation and agreement among the Inverness (Multnomah County), Troutdale and Gresham sewerage agencies. Specifically, a difficulty may arise initially regarding abandoning the Inverness and Troutdale plants, and subsequently, regarding management and financing of the regionalized wastewater treatment facilities. A possible interim step to meet treatment needs would be the construction of the pump station and force main from Troutdale to Gresham to handle Troutdale's expected overflow. After this, financial details can be settled, the regional plant at Gresham can be built, and the Troutdale plant can be abandoned.

Interim expansions of the Troutdale and Gresham plants of 1.6 MGD and 6 MGD respectively as well as the interim expansion to the Inverness Plant planned by Multnomah County are recommended to insure continuity of sewerage service in those communities until more detailed engineering studies of the regional treatment alternative can be performed.

Amendment No. 4: (Pg. 2-17) Adopted: October 2, 1980

Interceptor System (Reference to Figure 2-12 changed to 2-14)

Figure 2-[12]14 shows the existing collection system and interceptors proposed for Hillsboro-East and -West and a proposed force main from North Plains.

Hillsboro's existing collection system is quite old in central areas of the City. Average wet weather flows frequently exceed twice the average dry weather flow. Figure 2-[12]14 shows how the northern area in the Urban Growth Boundary in the Hillsboro-West service area will be served by interceptor extensions previously planned by the City, and by additional extensions proposed in this study. For purposes of computing present worth costs, all new interceptors will be built in 1980.

The Hillsboro-East service area's existing interceptor system is also shown in figure 2-[12]14. No additional interceptors are needed to collect flows to the year 2000. Repair or

replacement of some existing interceptors may be needed, particularly to control infiltration/inflow that should be considered in facilities planning for the City.

North Plains is not sewered at present. Figure 2-[12]14 shows how the North Plains area will be served by an interceptor system.

Amendment No. 5: (PG. 2-19A + 2-19B) Adopted October 2, 1980

LAND TREATMENT

In land application, the effluent from treatment plants represents a potential resource, rather than a waste to be disposed of. While the sludge is generally incinerated, used in landfill or as fertilizer, the effluent stream is conventionally discharged to a nearby stream such as the Tualatin River. The remaining nutrients, solids, oxygen demanding toxic and pathogenic constituents in the effluent add to the pollution of the stream from natural sources from overland runoff and agricultural chemicals. Conditions are aggravated during the summer because of high water temperatures and low stream flow due to irrigation water withdrawals and a low stream recharge from groundwater, rather than from snow melt.

Elimination of all pollutant discharges into the nation's waters is a goal established by federal law. Technical alternatives to attain this goal are either advanced waste treatment facilities or land application of effluent. Advanced treatment normally requires large amounts of chemicals and energy and generates substantial amounts of chemical waste sludge which requires ultimate disposal.

Health and aesthetic considerations in regard to crop production, potential groundwater contamination and pathogens are major concerns in land application. However, intensive research over the past few years indicates that proper land application techniques, site selection and monitoring can prevent adverse effects. Most heavy metals are removed by absorption or precipitation in insoluble form within the first few feet of the soil. Removal efficiencies for nitrogen and coliform bacteria, after effluent passage through approximately five feet of soil are generally adequate to meet public health criteria for drinking water. Indications are that the quality of land renovated wastewater is nearly the same regardless of whether raw, primary or secondary effluence is applied.

The following summarizes the conclusions of this study in regard to land treatment technology and its application in

Tualatin basin:

- Land application keeps nutrients and pollutants out of the rivers and assists in the goal of zero pollutant discharge.

- Land application makes sewage treatment more reliable since effluents of widely varying quality are purified to high degree.

- Irrigation of farm crops appears to be the most suitable land application method in the Tualatin basin and probably in other areas of the CRAG Metro region.

- Nutrients and water of the effluent would be recycled into plant tissue and produce higher crop yields.

- Effluent should be collected only during the irrigation season, which coincides approximately with the low stream flow period, in order to reduce the necessary storage capacity.

- Public health concerns are related to potential transmission of pathogens to animal and man, to potential pollution of groundwater and to the quality of crops.

- Proper techniques can prevent health hazards. Public perceptions in regard to sewage effluent could be an essential factor.

- Irrigation on agency-owned land would simplify operations. However, irrigation on private farm land would require less capital expenditure, the land would remain on the county tax roll and opposition to government competition with private farming would be avoided. Irrigation on private farms appears to be the better plan.

- Revenue from the sale of effluent could reduce the cost of the system. There appears to be a good demand for supplemental irrigation water.

- Most farm land in the Tualatin basin could be made irrigable for wastewater application by building tile underdrains.

- Regulatory restrictions in regard to the type of crops raised with effluent irrigation could impede the acceptance of land application by private farmers.

- Energy use for pumping can be considerable. The possibility of gravity flow must be investigated case-by-case. However, the use of energy and other natural resources is probably less for land application than for alternative tertiary treatment.

- Forest irrigation and rapid infiltration ponds appear to be viable alternatives to crop irrigation in Multnomah and Clackamas Counties. The size of treatment plants in these counties, the type of solid and vegetable cover require that these alternatives be examined.

Recommendations: Actual detailed alternatives for the land application of effluents was initially done only for the treatment plants discharging into the Tualatin River in Washington County. This is where DEQ felt that the water quality problems were the most critical. However, based on the [new] completed 303e basin plan and results of the preliminary investigations in other areas of the CRAG Metro region, land treatment in Clackamas and Multnomah Counties [will be] has been studied and the results incorporated into this plan as [a portion of the continuing planning process] an addition to Technical Supplement 9.

[The following initial recommendations can be made:]

As a result of this study the following Recommendations can be made:

1. Sewage effluent should be applied to land only during the growing season (May to October). Large storage capacities would be required to store effluent generated during the winter months when land application is not feasible.

2. For the land application system to work to the treatment agency's advantage, the agency should purchase the land.

3. Except in the Damascus/Boring and Happy Valley areas, spray irrigation should be the method of land application. Although overland flow application is technically feasible for these areas, institutional and regulatory constraints make land application infeasible. Other methods of wastewater treatment should be investigated for the Damascus/Boring and Happy Valley study areas, since it appears that DEQ discharge regulations will not be relaxed in the future and will become more restrictive. Alternatives which still remain for these communities include advanced (tertiary) waste treatment facility construction or connection to a nearby sewerage system.

4. Application rates for effluent application should be set to dispose of effluent at the maximum rate which the crops will tolerate without losses, and, preferably, to optimize crop yields at the same time.

5. Alternative plans for land application of wastewater effluents should employ features recommended in (1) through (4) above, and should be evaluated against alternative plans for advanced waste treatment in the Multnomah and Clackamas Counties expanded study area.

6. The Oregon State Department of Environmental Quality should examine and revise the guidelines on pre-treatment for sewage utilized in land application throughout the state.

7. The use of lagoons followed by dry weather (summer) land application and wet weather (winter) river discharge should be utilized in the smaller outlying communities. This would comply with DEQ's effluent limitations on many of the area's smaller streams and rivers, especially in Multnomah and Clackamas Counties.

8. Portions of the Sandy and Estacada land application sites are showing signs of imminent subdivision, although currently in agricultural use. This potential conflict in land use should be reviewed by Metro.

Amendment No. 6: (Pg 2-22) Adopted October 2, 1980

Sludge Handling

(Deleted third sentence of first paragraph)

At both Wilsonville and Canby, aerobic sludge digestion facilities will be expanded as part of the independent wastewater treatment facilities expansions. Digested sludge will be trucked and applied to farmers' fields. [The two jurisdictions should share the costs of sludge trucking equipment.] Operation and maintenance costs of trucking equipment and costs associated with the management and monitoring the land application operation could also be shared. Sludge storage is available at the existing Canby humus ponds while storage at Wilsonville could be provided by reworking the existing drying beds into a lagoon.

Total capital expenditures for Wilsonville sludge handling are estimated to be $238,000. The 5-year capital outlay for sludge handling at Wilsonville will be $208,000. Capital expenditures for sludge handling at Canby total $165,000, while the 5-year capital outlay will be $30,000.

Advantages, Potential Problems and Variations

Independent operation of the treatment facilities and financing and operation of the proposed new facilities is the lowest-total-cost method for wastewater management in this region. It involves the simplest institutional form for management and financing, requiring virtually no change from the existing institutional arrangement.

Independent wastewater treatment at two plants has, for this region, a higher environmental compatibility than regionalization of treatment facilities at either of the treatment plants. Pipelines between the two communities will be needed for regionalization and will cause some disturbance to wildlife. Also, the proposed plan requires less energy in its operation than do alternative plans proposing greater regionalization.

This plan assumes that Barlow will be eventually served by Canby. Facilities planning should evaluate this assumption and possible alternative sewage disposal systems, such as septic tanks, for Barlow.

Staged development of treatment facilities may be to the advantage of either municipality and should be considered. Both communities should from time to time consider the economics of selling effluent for irrigation of local farms. This might offer some savings in the cost of operations and would lead to an improvement in Willamette River water quality, however small.

Amendment No. 7: (Pg 2-30) Adopted October 2, 1980

Total Runoff	1 Average Overflow 1954 to 1959	2 Storm of 8/25/56	Ratio 2/1
Total Overflows (ft^3)	694,000	4,061,000	5.85
Antecedent Dry Days[a]	2.45	76.9	31.26
Storm Duration (hr)	5.2	8.0	1.53
Sus-S (lb)	2,646	84,002	31.75
Set-S (lb)	2,278	74,067	32.51
BOD_5 (lb)	670	14,357	21.42
N (lb)	34	412	12.11
P (lb)	24	234	9.75
Coliforms[b] (MPN/100 ml)		0.575×10^6	1.238×10^6

2.15

RECOMMENDATIONS

A complete plan for abatement of combined sewer overflows cannot begin until regulating bodies determine the effect of pollution from this source on receiving waters and issue standards of treatment or load limits. Recognizing that combined sewer overflows are a significant source of pollutants, however, and in light of DEQ's interim policy that pollution of nonpoint sources should not be allowed to increase, the following initial recommendations can be made:

- DEQ should remove the requirement to limit diversions to divert 3 times average dry weather (ADW) flow for individual basins in favor of a general standard for the whole system. This would allow the flexibility to capture and treat more flow from basins with higher pollutant loads (i.e., industrial and commercial areas) while diverting more than ADW flow from cleaner basins.

- [Development that would add to flows in sewerage subject to overflow should not be allowed until a plan for reduction of overflows is adopted.]

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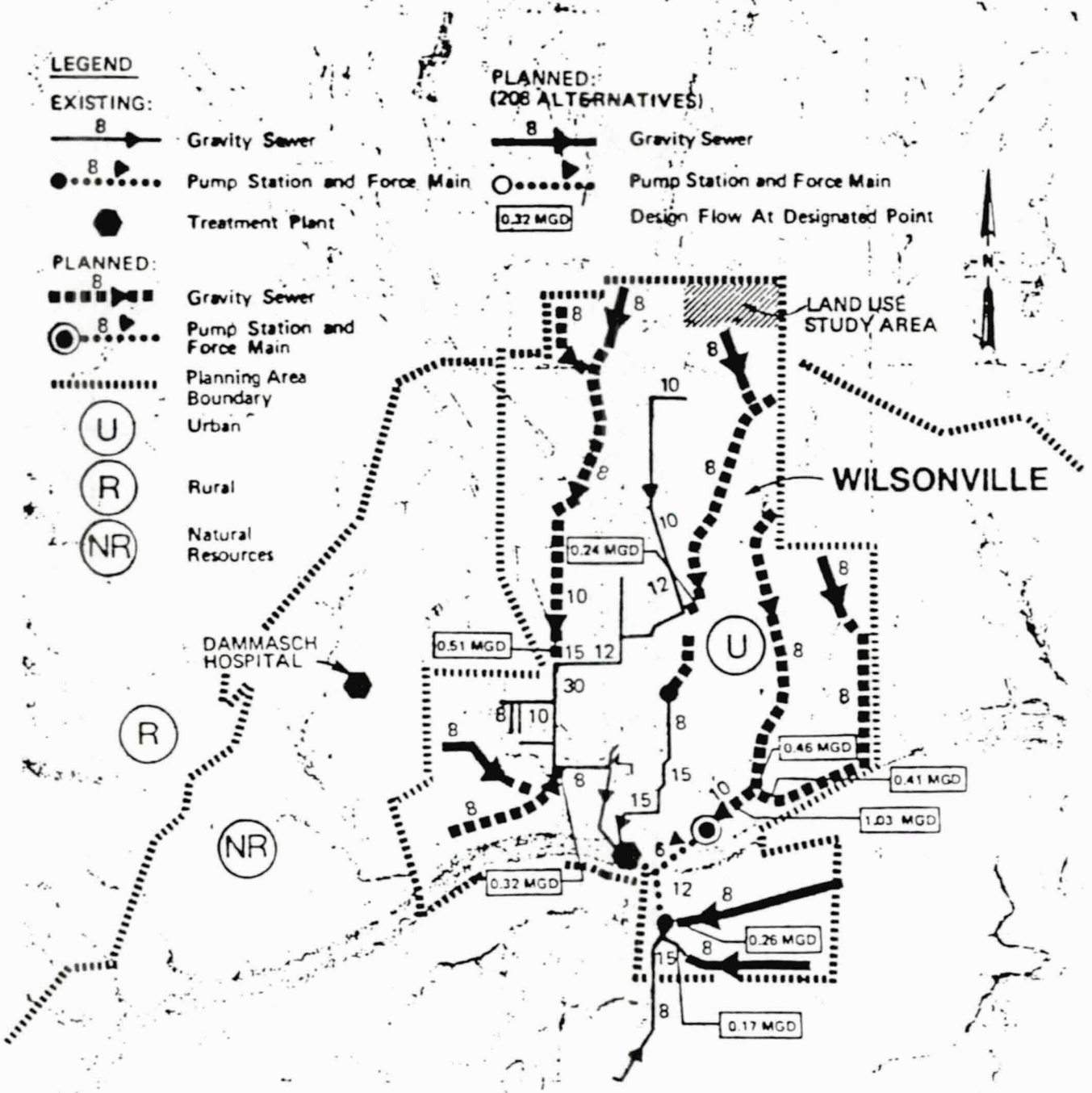
[a]Days of pollutant build-up not washed off by preceding storms.
[b]Average concentration for duration of the storm.

0141B/MH

Amendment No. 8: (pg. 2-69) Adopted October 2, 1980



Note: Incorrect mapping of gravity sewers on this map to be corrected upon receipt of information from City of Wilsonville. This mapping error shall not impair provision of sewerage service in any way.

FIGURE 2-17
WILSONVILLE
PROPOSED PLAN

III. Maps

Regional Wastewater Management Plan

Collection System Service Areas

Adopted: Water Resource Policy Alternative Committee, 10-26-84 (Amendment #13)
Metro Council, 12-6-84 (Ord. #84-184)
Updated:
8-26-86 (Ord. 86-206)
10-22-87 (Ord. 87-229)
12-22-88 (Ord. 88-275)
9-14-89 Preliminary

Metropolitan Service District 2000 SW 1st Ave. Portland, OR 97201
503 221-16

USA
Urban Growth Boundary
Study Area
Provides service to I-5 Baldock Rest Area

Regional Wastewater Management Plan

Sewerage Transmission & Treatment Service Areas

Adopted: Water Resource Policy Alternative Committee, 10-26-84 (Amendment #12)
Metro Council, 12-6-84 (Ord. #84-184)
Updated:

8-26-86 (Ord. 86-206)
10-22-87 (Ord. 87-229)
12-22-88 (Ord. 88-275)
9-14-89 Preliminary

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503 221-16