BEFORE THE COUNCIL OF THE
METROPOLITAN SERVICE DISTRICT

FOR THE PURPOSE OF ADOPTING AND IMPLEMENTING THE REGIONAL STORMWATER MANAGEMENT PLAN.	))))))	ORDINANCE NO. 82-128 Introduced by the Regional Development and Services Committees

SECTION 1. AUTHORITY AND PURPOSE

(A) This ordinance is adopted pursuant to ORS 268.310 (3) and 268.390 (1)(b) for the purpose of adopting and implementing a Regional Stormwater Management Plan, herein after referred to as the "Plan."

The Plan shall include the Plan Text, dated February 1982, the eight Regional Drainage Basin Maps, dated February 1982, and the following support documents:

1. Regional Stormwater Management Inventory, Metropolitan Service District, April 1980

2. Technical Supplement 13, Stormwater Management Design Manual, Metropolitan Service District, Spring 1980

3. Technical Report #1, Basic Data Report, Portland State University, 1981

4. Technical Report #2, Instream Water Quality, Portland State University, 1981

5. Technical Report #3, Effectiveness of Selected Management Practices, Portland State University, 1981

6. Technical Report #4, Regional Drainage Basins Report, Portland State University, 1981

7. Technical Report #5, Monitoring Report, Portland State University, 1981

(B) The Plan shall become effective ninety (90) days after the date of adoption. As a result of Metro's continuing "208" Water Quality Program, the Council hereby designates water quality and stormwater management as an activity having significant impact upon the orderly and responsible development of the region.

SECTION 2. ADOPTION

The Regional Stormwater Management Plan, dated February 1982, copies of which are on file at Metro offices, is adopted and shall be implemented as required in this ordinance.

SECTION 3. REGIONAL DRAINAGE BASIN DESIGNATIONS

(A) Eight minor drainage basins in the Metro region are hereby determined to be Regional Drainage Basins for the purposes of the Plan. These basins have been selected because they:

1. encompass three (3) or more local jurisdictions (city or county); and
2. they currently have stormwater management problems or a high potential for such problems due to increased development.

(B) The Regional Drainage Basins are shown on the Regional Drainage Basin maps and are listed below:

1. Beaver/Kelly Creek
2. Fairview Creek
3. Kellogg/Mt. Scott Creek
4. Tryon Creek
5. Fanno Creek
6. Beaverton/Cedar Mill Creek
7. Rock Creek
8. Johnson Creek

(C) In addition to drainage issues within the Regional Drainage Basins, the METRO COUNCIL can choose to address other drainage and water quality issues outside of the Regional Drainage Basins if those issues involve three or more jurisdictions (city, county or state) and arise, or have the potential to arise, as the result of increased development.

SECTION 4. POLICIES AND GUIDELINES

In order to help meet the regional objectives prescribed in ORS 268.310(3) and ORS 268.390(1)(b) the following drainage Management Policies and Guidelines are established.

(A) Policy: To minimize on-site erosion during site preparation and construction. To implement this policy, the following guidelines are suggested:

(1) Temporary Erosion Control Plans (TECP) should be considered as part of an overall site drainage plan for all new development on slopes in excess of 12 percent.

(2) Chapter 70 (Excavation and Grading) of the State of Oregon Structural Specialty Code and Fire and Life Safety Code should be adopted by all local jurisdictions within the Metro region.

(3) For developments which do not require a TECP, removal of vegetation during the construction period should be minimized, with replacement and/or enhancement of vegetation upon completion of construction.

(B) Policy: To minimize streambank and channel erosion by controlling the amount and rate of stormwater runoff. To implement this policy, the following guidelines are suggested.

(1) Stormwater drainage systems should place emphasis on maximizing natural water percolation. Runoff which cannot be accommodated by soil percolation should be directed to natural drainageways so as not to degrade instream water quality or contribute to the peak flood flow.

(2) Natural drainageways should be ripraped or otherwise stabilized as necessary below drainage and culvert discharge points for a distance sufficient to convey the discharge without channel erosion.

(3) Erosion protection should be provided the full length of any channel section in which water velocity exceeds the scour velocity of the natural channel materials.

(4) Riparian vegetation that protects streambanks from eroding should be maintained and enhanced.

(5) Removal of fill material or construction within stream channels and floodways should be accomplished so that:

(a) there is no increase in suspended sediment or turbidity above background level; and

(b) there is no decrease in channel capacity.

C. Policy: To manage the 100-year floodplain and floodway in order to protect their natural function, and minimize water quality degradation and property damage. To implement this policy, the following guidelines are suggested:

(1) Local drainaged management agencies as identified in Table III-1, are encouraged to establish Regional Drainage Councils to coordinate basin-wide drainage management.

(2) Drainage plans and policies within Regional Drainage Basins should be coordinated by all local drainage management agencies within the basin.

(3) All local drainage management agencies should adopt and maintain regulations necessary to qualify for the National Flood Insurance Program.

(4) Local drainage management agencies are encouraged wherever possible to retain floodway and floodplain lands as open space used for flood storage recreation and wildlife habitat.

(D) Policy: To protect and enhance the capacity of urban streams to provide habitat for fish and other aquatic organisms. To implement this policy, the following guidelines are suggested:

(1) The removal of fill material or construction in fish spawning areas shall be in accordance with the policies of the State Department of Fish and Wildlife and the Division of State Lands.

(2) Canopy-forming riparian vegetation should be preserved or replaced along all year-round streams.

(3) Community education programs should be developed to help minimize the disposal of harmful or toxic materials in storm drains.

(4) Cooperative fish enhancement programs between civic groups, local jurisdictions and the Oregon Department of Fish and Wildlife are encouraged.

SECTION 5. DRAINAGE MANAGEMENT AGENCIES.

For the purposes of this chapter the following Management Agencies have been designated:

(A) Region-wide Planning and Coordination shall be done by the Metropolitan Service District.

(B) Regional Drainage Basin Management should be coordinated within each of the following basins by the respective jurisdictions:

(1) Rock Creek Basin:

(a) Hillsboro
(b) Portland
(c) Multnomah County
(d) Washington county

(2) Beaverton/Cedar Mill Creek Basin:

(a) Beaverton
(b) Portland
(c) Multnomah County
(d) Washington County

(3) Fanno Creek Basin:

(a) Beaverton
(b) Durham
(c) Lake Oswego
(d) Portland
(e) Tigard
(f) Tualatin
(g) Clackamas County
(h) Multnomah County
(i) Washington County

(4) Tryon Creek Basin:

(a) Lake Oswego
(b) Portland
(c) Clackamas County
(d) Multnomah County

(5) Kellog/Mt. Scott Creek Basin:

(a) Gladstone
(b) Happy Valley
(c) Milwaukie
(d) Clackamas County
(e) Washington County

(6) Johnson Creek Basin:

(a) Gresham
(b) Happy Valley
(c) Milwaukie
(d) Portland
(e) Clackamas County
(f) Multnomah County

(7) Fairview Creek Basin:

(a) Fairview
(b) Gresham
(c) Troutdale
(d) Wood Village
(e) Multnomah County

(8) Beaver/Kelly Creeks:

(a) Gresham
(b) Troutdale
(c) Multnomah County

SECTION 6. PLAN AMENDMENTS

(A) Revisions in the Regional Plan shall be in accordance with procedural rules adopted by the Council pertaining to review and amendment of functional plans.

(B) Mistakes discovered in the Regional Plan Text or Maps may be corrected administratively without petition, notice or hearing. Such corrections may be made by order of the Council upon determination of the existence of a mistake and of the nature of the correction to be made.

SECTION 7. CONTINUING PLANNING PROCESS

(A) Goals of the Continuing Planning Process are:

(1) To provide a forum for evaluating and refining the Regional Plan.

(2) To assist Metro with the evaluation and prioritization of its stormwater Management activities.

(B) An annual workshop is to be held on or about the date of the annual meeting of the Water Resources Policy Alternatives Committee. This workshop shall be designed to accomplish the following:

(1) Serve as a forum for evaluating Regional Plan performance and needs.

(2) Provide an annual community assessment of Metro's drainage program.

(C) The following ongoing program activities are proposed, subject to availability of financial resources, in support of the Continuing Planning Process:

(1) Regional Planning Framework - To facilitate a consistent regulatory framework for drainage management Metro will explore the formation of Regional Drainage Councils comprised of the local management agencies designated in Section 5.

(2) Regional Drainage Information Clearinghouse - Metro should establish a regional technical

information service to encourage and complement regional plan implementation efforts at the local level.

(3) Community Involvement - Metro should maintain an ongoing public involvement program designed to establish a regional constituency stormwater quality management.

SECTION 8. SCOPE AND APPLICATION

This ordinance shall apply to all land development within the eight Regional Drainage Basins identified in Section 3 and illustrated on maps contained in Part IV of the Regional Plan.

SECTION 9. SEVERABILITY

(A) The sections of this ordinance shall be severable, and any action or judgment by any state agency or court of competent jurisdiction invalidating any section of this ordinance shall not affect the validity of any other section.

(B) The sections of the support documents adopted as part of the Regional Plan shall also be severable and shall be subject to the provisions of subsection (A) of this section.

(C) For purposes of this section, the maps included in the Regional Plan shall be considered as severable sections, and any section or portion of the maps which may be invalidated as in subsection (A) above shall not affect the validity of any other section or portion of the maps.

SECTION 12. FINDINGS

This Ordinance incorporates the findings attached as Part II.

ADOPTED by the Council of the Metropolitan Service District this 4th day of March, 1982.

Cindy Banzer
Presiding Officer

ATTEST:

Sue Haynes
Clerk of the Council

JL/srb
4635B/283

REGIONAL STORMWATER MANAGEMENT PLAN

II.

FINDINGS

February, 1982

FINDINGS

1. Section 101 of the Federal Water Pollution Control Act Amendments declares that, it is the goal of that act, and a national goal, that the discharge of pollutants into navigable waters be eliminated by 1985; that wherever attainable an interim goal "of water quality which provides for the protection and propagation of fish, shellfish and wildlife and provides for recreation in and on the water be achieved by July 1, 1983; that areawide waste treatment planning processes be developed to assure adequate control of sources of pollution within the state; and that a major research and demonstration effort be made to develop the technology needed to eliminate the discharge of pollutants into navigable waters.

2. Section 208.(a) of the Federal Water Pollution Control Act Amendments provides for the facilitation of areawide waste treatment plans through the designation, by the Governor, of areas and appropriate agencies for planning activities to meet the goals of the Act.

3. Section 208.(b)(2)(H) of the Federal Water Pollution Control Act Amendments requires that any plan prepared include a process "to identify constuction activity related sources of pollution, and set forth procedures and methods (including land use requirements) to control to the extent feasible such sources."

4. In 1975, CRAG was designated as the Areawide Waste Treatment Management Planning Agency for the Portland Metropolitan Area pursuant to Section 208 of the Federal Water Pollution Control Act Amendments.

5. CRAG conducted a $1.8 million, two-year study to develop a "208" plan which resulted in a plan with 14 support documents, and which was adopted by CRAG Rule No. 78-4 dated June 22, 1978.

6. The "208" plan adopted by CRAG on June 22, 1978 recommended that studies be undertaken to determine more adequately the precise nature of pollutants entering region streams, their concentrations, and methods to stop or abate their entry. The "208" plan provided for stormwater management planning subsequent to plan adoption.

7. Metro has undertaken extensive water quality studies and has documented management techniques. These are both incorporated in the proposed Regional Stormwater Management Plan.

8. The CRAG "208" plan as added to herein is consistent with Statewide Land Use Planning Goals as described below:

GOAL #1 - CITIZEN PARTICIPATION

This goal has been met through extensive consultation with Metro's Water Resources Policy Alternatives Committee. To assure the broadest possible representation of interests, Committee membership consisted of the following:

- three citizens at large (representing the three counties in the Metro area)
- Clackamas County
- Multnomah County
- Washington County
- City of Portland
- City of Gresham (representing cities of Multnomah County)
- City of Hillsboro (representing cities of Washington County)
- City of Lake Oswego (representing cities of Clackamas County)
- Izaak Walton League of America
- Western Environmental Trade Association
- Oregon Environmental Council
- Oregon Homebuilders Association
- Oregon Department of Fish and Wildlife
- Oregon Department of Environmental Quality
- Oregon Water Resources Department
- Port of Portland
- U.S. Army Corps of Engineers
- Portland General Electric
- Regional Planning Council of Clark County
- Hazelwood Water District (representing all Metro area water districts)
- Oak Lodge Sanitary District (representing all Metro area water districts)
- Association of Oregon Industries
- Area 2 Soil and Water Conservation Districts
- Water Recreation Industry
- Columbia River Yachting Association

This Committee has met monthly since 1975. Its purpose is to provide policy and technical advice to Metro staff during "208" plan formation and implementation. Numerous opportunities for public comment on the plan were provided before this committee, before the Services and Development Committees of the Council, and before the Council itself.

In addition, Metro staff organized a one-day workshop, attended by both public and private sector development interests, to discuss the Plan and to evaluate potential implementation mechanisms.

GOAL #2 - LAND USE PLANNING

The basis for this plan rests in technical studies carried out expressly for the purpose of providing a factual basis for

management policies and guidelines. The plan was developed with the aim of coordinating the drainage management activities of local jurisdictions and focuses specifically on those aspects of drainage management not addressed at the local level or addressed only in part.

GOAL #3 - AGRICULTURAL LANDS

Most of the land within the eight regional drainage basins lies within the Urban Growth Boundary (UGB). For those areas outside of the UGB, this plan encourages the preservation of natural drainage systems and of the landscape in the predeveloped state. For this reason, the plan where applicable is consistent with Goal #3.

GOAL #4 - FOREST LANDS

The plan encourages local jurisdictions to prohibit development within floodplains and floodways. There is a clear emphasis on enhancing natural percolation to minimize flooding problems. The plan discourages the removal of vegetation and tree cover and encourages the preservation of forested lands as buffers for scenic and recreational use.

GOAL #5 - OPEN SPACES, SCENIC AND HISTORIC AREAS, AND NATURAL RESOURCES

The plan, designed primarily to preserve water quality and to reduce the damaging effects of upland and streambank erosion, encourages the protection and preservation of open space and significant natural resources within floodplains and floodways. The plan recognizes natural drainageways and stream channels as being important resources in need of protection from the effects of methopolitan development. The present action carries forth the effort begun by the previous "208" planning effort.

GOAL #6 - AIR, WATER AND LAND RESOURCES QUALITY

The central purpose of the 1978 action, carried forth by this plan, is the maintenance and improvement of water quality in the region. This proposed plan is brought forth specifically for the purpose of managing stormwater quality and the impact of stormwater flows on region surface water bodies, consistent with the previously adopted "208" plan.

GOAL #7 - AREAS SUBJECT TO NATURAL DISASTERS AND HAZARDS

This plan recognizes that floodplains and floodways, aside from serving specific hydraulic purposes, might also pose hazards to life and property. Appropriately, this plan endorses local adoption of National Flood Insurance standards which mitigate these potentially harmful affects.

GOAL #8 - RECREATIONAL NEEDS

By managing stormwater quality, this plan will help the region attain national water quality goals, which, in turn, will increase availability of water-related recreation resources.

GOAL #9 - ECONOMY OF THE STATE

The effect of this plan on the objectives of Goal #9 will be slight. This plan seeks mechanisms for implementation which result in the lowest possible cost to private interests, local governments and consumers. In addition, failure to address the true costs of stormwater management, as urged in this plan, can result in markedly higher costs for maintenance and restoration in the future.

GOAL #10 - HOUSING

This plan strives to accommodate Goal #10 and the housing goals contained in local comprehensive plans while, at the same time, including drainage management planning as a positive attribute in site development. Ultimately, sediment, the number one pollutant in the region, is best controlled at the source, in this case the individual domicile. This plan has been formulated to incorporate and encourage,as the underlying basis for stormwater quality management, locally adopted incentives and controls to reduce stream sediment loading at its source.

GOAL #11 - PUBLIC FACILITIES AND SERVICES

The plan addresses the kinds of actions needed to minimize detrimental loading of public facilities and services. Stormwater quality management is undertaken precisely for the purpose of assuring that development occurs in an orderly and environmentally sound manner. The plan recognizes that it is more effective and efficient to anticipate public facility needs, rather than to try to patch up an ineffective system.

GOAL #12 - TRANSPORTATION

This plan will not affect the objectives expressed in Goal #12.

GOAL #13 - ENERGY CONSERVATION

This plan will not affect the objectives expressed in Goal #13.

GOAL #14 - URBANIZATION

This plan is being proposed specifically to deal with the stormwater challenges posed by new development. This is nowhere as evident as in areas experiencing the transition from rural to more urban land use patterns. The plan is designed to ensure that stormwater problems are not unnecessarily accelerated or intensified.

REGIONAL STORMWATER MANAGEMENT PLAN

III.

PLAN TEXT

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ARTICLE I. INTRODUCTION:

In the natural order of our universe the Hydrologic cycle is an important element. In the Pacific Northwest its importance is even more apparent. Water is nature's cleanser, removing atmospheric contaminants, washing away dirt and debris, while at the same time recharging groundwater aquifers and replenishing surface streams and reservoirs. With the advent of modern civilization, the natural hydrologic cycle has been altered. As mankind built cities and factories, more and more contaminants were introduced to the atmosphere and onto the land. With the rains these contaminants are washed into lakes and streams to mix with other pollutants from industrial and municipal point source discharges. The increase of impervious surface in urban areas hastens runoff, reducing groundwater recharge and increasing flooding and erosion.

During the 70's we became increasingly aware of the contribution of municipal and industrial point source discharges to the nation's water quality problem. An ambitious program of wastewater treatment plant construction reduced the contribution from these point sources to where future advances resulting from higher treatment levels may be offset by increases in urban runoff and other non-point sources.

Unfortunately urban runoff does not easily lend itself to conventional wastewater treatment methods. Cost estimates for collecting and treating the nation's urban runoff have ranged as high as 400 billion dollars*. Fortunately, the urban runoff problem can be addressed to a large extent though planning and management. The management plan which follows is a first step toward controlling the water quality impacts of urban stormwater runoff in the Portland region within the Metropolitan Service District boundary.

Section 1. Study Background

Congress, in drafting the Federal Water Pollution Control Act Amendments of 1972 (PL 92-500), stressed the need for examination of all contributing causes to poor water quality. Section "208" of this act provided federal funds to local planning agencies to develop regional waste treatment management plans to address all "point" and "non-point" water quality problems. The Columbia Region Association of Governments (CRAG) was designated an areawide "208" agency by the Governor in 1975. With the help of "208" funds, CRAG commissioned a study to determine the nature and magnitude of water quality problems related to urban stormwater runoff in the Portland area. Consultants in this study included the U.S. Corps of Engineers, the U.S. Geological Survey and the City of Portland.

*1976 EPA Needs Survey Estimate

In Phase I of this project data was gathered from federal, state and local agencies as input and background material for the study. Also in this phase, new hydrologic data were gathered from 16 basins within the CRAG region. Water quality samples were taken during storm events and under base-flow conditions at seven of these stations for approximately one year.

Phase II consisted of utilizing the data gathered in Phase I to calibrate a computer model which simulated rainfall-runoff and the pollution loads for the entire study area.

In Phase III all basins were identified and simulated with appropriate development for the present conditions and for the conditions expected in the year 2000.

Phase IV included an analysis of possible methods of pollution abatement of management practices to reduce pollutant loads.

This initial effort resulted in two reports (1, 2)* which characterized the nature of the urban stormwater runoff in the Portland area but did not develop a regional management strategy or plan for dealing with the problem.

During the same period that CRAG was analyzing the water quality aspects of urban runoff, the Metropolitan Service District (MSD) was addressing a quantity problem related to urban runoff, the repeated flooding along Johnson Creek. This problem dates back to the 30's and has become more intensified as development within the Basin increased. Previous attempts to solve this flooding problem failed because of the difficulty created by multiple governmental jurisdictions within the Basin. Each jurisdiction imposed drainage controls to a greater or lesser extent within their own area, but MSD was the first agency to look at the problem from a basinwide perspective. MSD analyzed various alternatives for solving the Johnson Creek drainage problems including channel improvements, runoff regulations, greenways, upstream storage reservoirs and various combinations of these alternatives. The draft management plan (3) which resulted proposed a technical solution to the immediate flooding problem as well as financial and management options for implementation. It also recommended that a continuing planning process be undertaken to develop a Comprehensive Drainage Plan that would keep pace with changes in the characteristics of the drainage basin. The MSD management plan was never implemented, primarily because MSD lacked the financal resources.

*Numbers in parentheses correspond to numbered references.

On January 1, 1979, in response to an election mandate, MSD and CRAG were merged into one agency. The resultant Metropolitan Service District (Metro) became the first regional government in the nation with a popularly elected Council and Executive Officer. Metro now has the responsibility for "208" Water Quality Planning as well as authority for drainage management within its jurisdiction.

One of the first actions of the new Metro Council was the designation of the Johnson Creek drainage problem as a matter of regional concern and the appointment of a Task Force to recommend a solution. At the same time, Metro focused its continuing "208" program on developing a regional plan for stormwater management based in part on the experience gained in the Johnson Creek Project. The report that follows outlines the planning process, the results of technical studies undertaken, and the proposed management plan which resulted from this program.

Section 2. Management Concept

There are six basic components of a Regional drainage Management Program:

1. Regional Basins
   Stormwater management in order to be effective must be accomplished on a "basinwide" scale. A drainage basin can range in size from as small as the area drained by a single storm sewer catchbasin to as large as the area drained by the Columbia River. The first task in establishing a stormwater management program is determining an optimum basin size. Ideally, the basin should be large enough to be managed economically yet small enough that the drainage system can be understood.

2. Data Base
   The next basic component of a stormwater management program is a frame of reference or data base for decision-making. While the hydrology and water quality of large rivers like the Columbia or Willamette are monitored regularly, very little is known about the smaller drainages in the Portland area, particularly during storm events. Likewise, the impact of urban runoff from these small drainages on the Willamette or Columbia Rivers is not known. Gathering data on stormwater runoff can be an expensive proposition. To fully understand the phenomena of a storm event, data must be gathered on the amount, duration and intensity of the rainfall, the quantity and timing of runoff, along with all the potential pollutants in the runoff. This data must then be correlated with the basin size and land use

activities. Because no two storm events are alike, runoff water quality is dependent on antecedent conditions and land use activities continually change, data gathering can become an expensive, never ending task. The cost of data collection should be one factor considered in determining the optimum sized basin for management. The cost of data collection can be reduced through the use of automated equipment and key water quality parameters such as conductivity, turbidity and indicator bacteria. Before these key parameters can be useful, correlations with other parameters and basin land use must be established.

3. Development Policies and Guidelines

The third basic component of a regional stormwater management program is the establishment of minimum development policies and guidelines for each basin. Such standards are intended primarily as a mechanism for coordinating the drainage related policies of local jurisdictions within a regional basin. They should address development in the floodplain and floodway, drainage and erosion control during and after construction, channel maintenance and riparian vegetation protection. Individual jurisdictions within a basin could implement more stringent controls as necessary to address localized drainage problems.

4. Design Standards

The fourth basic component of a Regional Stormwater Management Program is technical design standards for control measures necessary to meet the minimum development standards. These control measures are often referred to as "Best Management Practices" (BMP) for controlling stormwater runoff.

5. Evaluation Process

The four basic management components outlined above might be considered the elements of a "passive" stormwater management program. In many basins with limited development or well-drained soils, this may be all that is required in the way of management at this time. In other basins with poorly drained soils and/or large areas of existing development, more intensive management may be required. The implementation of an intensive drainage management program at the regional level is a political decision which will require the support of basin residents and local political jurisdictions. Not only will a sound data base be required to gain this support but also some mechanism for determining when development standards are inadequate, a triggering mechanism or early warning system for notifying basin residents of potential problems.

6. Financial Plan
The final component of a Regional Drainage Management Program is a financing plan which is the most difficult component to address.

Section 3. Planning Approach

In July of 1979 with the financial assistance of the US Environmental Protection Agency through a Section "208" grant, Metro initiated a Regional Stormwater Management Planning Program for the Portland metropolitan area. This program was actually a continuation of the earlier planning attempts of CRAG and MSD and was designed to address each of the management components discussed above.

Metro contracted with Portland State University to conduct the technical studies discussed in Element B. In addition, Mathematical Science Northwest, Inc. was retained to develop a design manual of urban runoff control practices specific to the Metro region (4).

Public input as part of Metro's ongoing citizen involvement program, was provided through the Water Resources Policy Alternatives Committee (WRPAC). Membership on WRPAC includes:

- 3 citizens at large (representing the three counties in the Metro area)
- Clackamas County
- Multnomah County
- Washington County
- City of Portland
- City of Gresham (representing cities of Multnomah County)
- City of Hillsboro (representing cities of Washington County)
- City of Lake Oswego (representing cities of Clackamas County)
- Izaak Walton League of America
- Western Environmental Trade Association
- Oregon Environmental Council
- Oregon Homebuilders Association
- Oregon Department of Fish and Wildlife
- Oregon Department of Environmental Quality
- Oregon Water Resources Department
- Port of Portland
- US Army Corps of Engineers
- Portland General Electric
- Clark County Regional Planning Council
- Hazelwood Water District (representing all Metro Area Water Districts)
- Oak Lodge Sanitary District (representing all Metro Area Sanitary Districts)
- Association of Oregon Industries

- Area 2 Soil and Water Conservation Districts
- Water Recreation Industry
- Columbia River Yachting Association.

All work programs, consultant selection and Metro staff work was reviewed by WRPAC, whose recommendations are forwarded to the Metro Council through the Regional Development and Services Committees.

In addition to the WRPAC, Metro appointed a special Task Force to develop alternatives for financing remedial drainage management and flood control work in the Johnson Creek Basin. This project although part of Metro's ongoing drainage management program is not part of the plan proposed in this report.

Section 4. Scope

One of the first steps in the planning process was defining the scope of the program. Since stormwater management is best addressed at the basin level, this meant identifying regional drainage basins. This was necessary because the logical mechanism for implementing development standards for stormwater management is through the land use plans, zoning and building ordinances of cities and counties. Metro's authority is limited however to issues of "regional significance."

A second factor to be considered in selecting regional drainage basins is the potential success of the management program. The Portland metropolitan area lies at the confluence of the Willamette and Columbia Rivers as well as several other important drainages including the Clackamas, Tualatin and Sandy Rivers. Stormwater runoff problems originating in these basins, while manifesting themselves in the Portland area, are beyond the scope of management by Metro.

The selection of regional drainage basins for this progam was based in part on work that was done in the early 1970s by CRAG on a preliminary drainage plan for the region. The CRAG staff identified eight major and 53 minor drainage basins within the MSD boundary. The major basins were on the scale of the entire Tualatin River, and the east and west sides of the Willamette River. These major basins were considered too large for management so the minor basins within Metro's jurisdiction were selected for further study. The following basic criteria were established for selecting the regional basins for inclusion in the Management Planning Program:

1. basins must be multi-jurisdictional including two or more political subdivisions; and

2. enough of the natural watershed must lie within the Metro boundary to make management proposals effective.

The final basin selection was made with the help of Metro's Water Resources Policy Alternatives Committee (WRPAC). Staff recommendations were reviewed by WRPAC and eight basins were selected according to the above criteria and on the basis of geographical size, population, seriousness of current problems and potential for increased problems due to increased development. Economic and political factors were also considered. The Willamette and Columbia Rivers as well as the basins encompassing the mouths of the Tualatin, Clackamas and Sandy Rivers were eliminated because Metro did not have jurisdiction over a large enough portion of the watershed to make a management program realistic.

The basins selected by WRPAC include:

Name	Area
Beaver/Kelly Creek	13-1/2 sq. miles
Fairview Creek	11 sq. miles
Kellog/Mt. Scott Creeks	16-1/2 sq. miles
Tryon Creek	5-1/2 sq. miles
Fanno Creek	32-1/2 sq. miles
Beaverton/Cedar Mills Creeks	22 sq. miles
Rock Creek Creek	47.6 sq. miles
Johnson Creek	54.0 sq. miles

Specific information on each basin is included in the Regional Drainage Basins Report and in the "Regional Stormwater Management Inventory" (Metro, April 1981).

Selection of regional basins according to the criteria discussed have also limited the scope of the program in terms of types of non-point pollution sources, parameters and potential management practices. By eliminating drainage basins entirely within one political jurisdiction, a majority of the heavy industrial, commercial and dense residential areas within the City of Portland have not been included. Agricultural lands outside the Metro boundary and associated stormwater runoff problems have also been excluded from this program. These areas are covered by the Statewide "208" Water Quality Management Program administered by the Oregon Department of Environmental Quality (DEQ). Likewise, the issues of combined sewer overflow to the Willamette and Columbia Rivers are beyond the scope of this program. This problem was investigated as part of the initial CRAG "208" Studies and although the significance of this source on the water quality of the

Willamette River was never fully determined, the City of Portland has made continuous progress toward separating the combined sewers in its system and has established a sophisticated computer operated control system for minimizing overflow from these remaining combined sewers.

ARTICLE II. TECHNICAL STUDIES:

Section 1. Summary

1. Introduction

In order to provide the technical data necessary to develop and support the conceptual components of a Regional Stormwater Management Plan discussed earlier, Metro commissioned a series of studies by Portland State University. These studies were designed to accomplish the following objectives:

a. monitor instream, stormwater quality in Johnson Creek, Kelly Creek and Fanno Creek;
b. determine the sources of pollutants related to storm runoff found in these Creeks;
c. determine the impact of stormwater-related pollutants on instream water quality and beneficial uses of Portland area streams;
d. develop an inexpensive methodology to monitor stormwater quality;
e. identify drainage basin size most suitable for management decisions to control stormwater quality;
f. develop a descriptive model relating land use activities to stormwater quality which is specific to the Portland metropolitan area; and
g. evaluate the effectiveness of selected Best Management Practices (BMP).

The five technical reports included in this section are the output of these studies. The first report includes all of the basic data collected: station location, sampling and analysis techniques, and quality control measures. Report No. 2 is an interpretive analysis of the impacts of urban stormwater runoff on instream water quality. Report No. 3 analyzes the effectiveness of selected BMP in reducing water quality impacts. Report No. 4 inventories the physiographic characteristics of the eight indentified regional drainage basins. Report No. 5 recommends a simplified and economical approach to monitoring stormwater runoff utilizing "key parameters" and "paired basins" for comparison. Each report contains a number of conclusions related to the specific topic area. Many of these conclusions form the basis of the management plan proposed in

Article III. For this reason it is worthwhile at this point to summarize some of the more important conclusions.

2. Conclusions

a. Storm events fall into two categories: single events like thunderstorms; and more complex events referred to as waves, which are large cyclonic or frontal type storms of less intense but more widespread and longer duration. Thunderstorms are not common in the Portland area, as they are in the rest of the country. Most of the stormwater runoff comes from large frontal storms that are often part of a weather pattern which may last for days or weeks at a time during the period from October to May. Because of these weather patterns, stormwater management practices used in other parts of the country may not be practical.

b. Of the stormwater-related water pollutants monitored, suspended sediment is the most significant. The major source of sediment is land disturbance, primarily in new home construction and in agricultural activities. In the Johnson Creek Basin, the contribution of sediment from both activities is approximately equal. The concentration of sediment originating from urban and urbanizing land is not significantly different from the concentration originating from upstream rural and agricultural areas.

c. The levels of iron, manganese and zinc found in Johnson, Kelly and Fanno Creeks apparently originate from soil erosion. The concentrations observed correlate closely with the average crustal abundance found in local soils. Zinc concentrations sometimes exhibit a "first flush" pattern suggesting an additional contribution above background levels. Of the metals investigated, only zinc approached the EPA recommended "toxic threshold." Crawfish tissue analyzed for zinc and lead concentration did not indicate any accumulation of these metals which could be attributed to exposure to urban runoff.

d. During storm events, samples collected from Johnson, Fanno and Kelly Creeks frequently violated EPA criterion for fecal coliform bacteria, an indicator of fecal contamination. Baseflow levels were generally within limits. Insufficient data were collected to correlate

bacteria concentrations with other water quality parameters or land use characteristics. The level of fecal bacteria observed during storm events make water contact recreation inadvisable. Fortunately, this type of recreation is seasonal and generally does not occur during the wet weather season.

e. Strong correlations were found between turbidity and suspended sediment data and between specific conductance and dissolved solids data. In addition, a high degree of correlation was found between turbidity, suspended sediment and trace metals, and between specific conductance and major ions. Because of this correlation it is possible to use turbidity and specific conductance parameters as indicators of other water quality constituents. If combined with rainfall and stream discharge measurements, an economical and reliable method of routine stormwater data collection can be developed.

f. The pattern of large cyclonic or frontal type storm events which are common to the Portland area make it possible to sample several streams simultaneously during selected storm events each year. This enables the use of a "paired basins" method of data analysis. Because rainfall and discharge follow similar patterns throughout the area for a given storm event, data gathered can be compared to determine individual stream characteristics. This approach enables the early detection of long-term trends in water quality conditions in individual streams.

g. The Fanno Creek Basin which is nearly completely urbanized and unlikely to experience further dramatic changes in water quality related to urban stormwater runoff. For this reason, Fanno Creek serves as a "control basin" in analyzing regional water quality trends.

h. The past development within the region has taken place on the more gentle slopes. Future development can be expected to take place on the steeper slopes which already yield high percentages of stormwater runoff naturally. The increase in impervious surfaces on the steeper slopes (in excess of 12 percent) without sufficient management is potentially the greatest source of increased levels of pollution in stormwater runoff.

i. Retention/Detention ponds used for controlling stormwater runoff volumes can serve a water quality benefit. The water quality benefit appears to be a function of size. Larger "real estate lakes" found on Butler Creek, a tributary to Johnson Creek, are effective in reducing suspended sediment by removing particles in the range of 8 to 18 microns (medium to fine silt). However, turbidity, which is caused primarily by clay sized particles (smaller than two microns), is not significantly improved because the residence time is not sufficient to settle out these finer soil fractions.

j. Smaller detention ponds, such as those which have been required in Washington County, were found to be ineffective as a water quality management practice and some were of questionable benefit in controlling runoff volume. In addition, because of lack of maintenance, these facilities are often considered a nuisance by nearby property owners. One of the ponds observed did serve to trap debris and sediment during construction which suggests a possible benefit as a temporary control measure.

ARTICLE III. MANAGEMENT PLAN:

Section 1. Introduction

1. The Water Quality Problem

From the technical studies discussed in the previous section, it appears the most significant water quality problem related to stormwater runoff in Metro area streams is an increase in suspended sediment. The urban related sources of this sediment include site erosion during construction and channel erosion resulting from an increase in the rate of runoff from impervious surfaces.

2. Management Constraints

Mechanisms for controlling erosion and sedimentation are readily available. In the spring of 1980, Metro published a Stormwater Management Design Manual (4) which incorporates Best Management Practices (BMP) originally developed by the Snohomish County Washington Planning Department with design variables specific to soil and climatic conditions found in the Metro region. Additional measures for controlling soil and streambank erosion can be found in Chapter 70 of the Unified Building Code, the Oregon State Highway Division Hydraulics Manual and numerous other publications prepared by the American Society

of Civil Engineers, the National Association of Home Builders and the Urban Land Institute, among others.

The problem is not a lack of management techniques but rather of ensuring that these techniques are actually employed in a cost-effective manner. There are a number of social, financial and institutional constraints which hamper the implementation of urban stormwater related erosion control measures in the Metro region.

ORS 268.310(3) gives Metro the authority to "...control the flow and provide for the drainage of surface water...." However,

a. The best place to implement drainage and erosion control measures is at the local jurisdictional level through the established land use and building permit processes, not at the regional or Metro level.

b. Chapter 70 was deleted from the Uniform Building Code. And its adoption by municipalities is voluntary. In the Metro region only the cities of Portland, Gladstone, Fairview and Troutdale have taken this action.

c. Neither Metro nor most local governments have the necessary existing funds to enforce mandatory erosion and sediment control programs. Financial mechanisms for raising the necessary funds are available, such as increased taxes, special assessments, permit or user fees, etc. However, in the present economic climate, drainage management and erosion control programs are a low priority compared with the primary services of sewer and water, police and fire protection and schools.

d. Contractors are generally unwilling to include drainage management and erosion control measures in site development unless they are a specific cost item in the bid documents. Even then, inspection may be required to ensure proper design and installation.

e. Developers are opposed to control measures which take up valuable land, require ongoing maintenance or otherwise increase development costs.

f. Experience has shown that adjacent property owners object to drainage control ponds which are improperly designed and inadequately maintained.

Section 2. Management Objectives

Recognizing the above constraints the objective of the proposed management plan for the eight Regional Basins in the Metro area are as follows:

1. To protect and preserve these urban streams from the water quality impacts of stormwater runoff resulting from new development.

2. To encourage coordinated basinwide drainage management by local jurisdictions.

3. To incorporate preventive stormwater management into the established land use and permit process.

4. To allow for flexibility in applying the appropriate level of control measure best suited to the specific development site.

5. To provide incentives which encourage local jurisdictions as well as builders and developers to implement voluntary drainage management programs.

Metro recognizes that the preventative approach addresses only one side of the drainage management issue and that an institutional mechanism for funding remedial drainage management projects must be developed. The continuing planning process proposed in section D addresses this issue.

Section 3. Management Policies

1. Policy: To minimize on-site erosion during site preparation and construction.

   Guidelines:

   a. Temporary Erosion Control Plans (TECP) should be considered as part of an overall site drainage plan for all new development on slopes in excess of 12 percent. A mechanism for deteriming when a TECP should be required is included in Appendix G, Technical Supplement 13, Stormwater Management Design Manual (4). This procedure or a similar one developed by the USDA Soil Conservation Service in cooperation with the Washington County Soil and Water Conservation District (6) should be adopted to avoid arbitrary decisions concerning TECP requirements.

   b. Chapter 70 (Excavation and Grading) of the State of Oregon Structural Specialty Code and Fire and Life Safety Code should be adopted by all local jurisdictions within the Metro region.

c. For developments which do not require a TECP, removal of vegetation during the construction period should be minimized, with replacement and/or enhancement of vegetation upon completion of construction.

Discussion: A major source of suspended sediment is soil erosion from land which is temporarily bare during construction. Little soil loss usually occurs from Portland area soils when properly covered under normal conditions. However, when stripped of vegetation, soil loss may increase from as little as two tons/acre/year to over 200 tons/acre/year. Such losses can cause increased maintenance costs for local jurisdictions to clean roadway ditches and catch basins. Deposition of sediments into streams will destroy fish habitat and increase flooding potential by decreasing stream hydraulic capacity. The purpose of a TECP is to prevent this (4).

A TECP is a collection of simple straightforward management practices tailored to the individual construction site. These practices are described individually in Appendix H of Technical Supplement 13, Stormwater Management Design Manual (4). Erosion control during construction is not new to the Pacific Northwest. Such measures have been required routinely on road construction projects for several years by the Departments of Transportation in both Washington and Oregon. The decision to require a TECP on commercial, residential or industrial construction should be left to the discretion of the local engineer or building offical.

There is a greater erosion potential as slope angle increases. The Drainage Basin Inventory in Technical Report No. 4 indicates that future development within the eight regional Drainage Basins can be expected to occur on the steeper slopes (greater than 12 percent). The required use of TECP where necessary on slopes above 12 percent can significantly reduce the suspended sediment contribution from future development. A simple method for determining where a TECP should be required can be found in Appendix G of Technical Supplement 13, Stormwater Management Design Manual (4).

2. Policy: To minimize streambank and channel erosion by controling the amount and rate of stormwater runoff.

Guidelines:

a. Stormwater drainage systems shall place emphasis on maximizing natural water percolation. Runoff which cannot be accommodated by soil percolation should be directed to natural drainageways so as not to degrade instream water quality or contribute to the peak flood flow.

b. Natural drainageways shall be ripraped or otherwise stabilized as necessary below drainage and culvert discharge points for a distance sufficient to convey the discharge without channel erosion.

c. Erosion protection shall be provided the full length of any channel section in which water velocity exceeds the scour velocity of the natural channel materials.

d. Riparian vegetation that protects streambanks from eroding shall be maintained and enhanced.

e. Removal of fill material or construction within stream channels and floodways shall be acomplished so that:

   (1) there shall be no increase in suspended sediment or turbidity above background level; and

   (2) there is no decrease in channel capacity.

Discussion: Drainage regulations which attempt to control flooding and erosion by controlling runoff volume and rate are quite common. The primary emphasis of this plan is the control of water quality, however, neither element can be dealt with independently. The guidelines for this policy try to address both the quality and quantity aspect. The guidelines do not contain specific design criteria. The standard which has been recommended by the Corp of Engineers for the Metro region calls for controlling runoff to 0.15 inches per acre per hour which is equivalent to a 24-hour storm of 3.6 inches which is a one in 10 to 25 years event in this area (5c). Specific design criteria for each basin should be adopted by the respective drainage management agencies for that basin.

3. Policy: To manage the 100-year floodplain and floodway in order to protect their natural function, and minimize water quality degradation and property damage.

Guidelines:

a. Local drainage management agencies as identified in Table III-1, are encouraged to establish Regional Drainage Councils to coordinate Basins-wide drainage management.

b. Drainage plans and policies within Regional Drainage Basins shall be coordinated by all local drainage management agencies within the basin.

c. All local drainage management agencies shall adopt and maintain regulations necessary to qualify for the National Flood Insurance Program.

d. Local drainage management agencies are encouraged wherever possible to retain flood way and floodplain lands as open space used for flood storage recreation and wildlife habitat.

Discussion: All of the local initiated agencies listed in Table III-1 have some form of drainage management program. All have or in the process of adopting floodplain ordinance. In fact, almost all of the policies and guidelines proposed in this plan are already in existance in at least one local jurisdiction in the Metro area. The only exceptions are the guidelines requiring the formation of regional drainage councils and the coordination of drainage management plans and policies basinwide. Coordination of drainage planning within each regional basin is a first step toward the development of specific basin level drainage management plans.

4. Policy: To protect and enhance the capacity of urban streams to provide habitat for fish and riparian organisms.

Guidelines:

a. The removal of fill material or construction in fish spawning areas shall be in accordance with the policies of the State Department of Fish and Wildlife and the Division of State Lands.

b. Canopy forming reparian vegetation should be preserved or replaced along all year-round streams.

c. Community education programs should be developed to help minimize the disposal of harmful or toxic materials to storm drains.

d. Cooperative fish enhancement programs between civic groups, local jurisdictions and the State Department of Fish and Wildlife are encouraged.

Discussion: One of the major objectives of the Federal Clean Water Act is to improve and protect the quality of the nation's waters for contact, recreation and fish habitat. This policy addresses the national objective and also recognizes that fish enhancement programs offer a focus for community involvement in drainage management.

Section 4. Management Agencies

For the purpose of this plan, management agencies have been identified on the basis of their implementation authority. Identification as a management agency at this point does not mean that a local jurisdiction is mandated to implement the management policies outlined in this section. Metro, as the regional agency with responsibility for Drainage Management and Water Quality protection, will attempt to encourage, through incentives, voluntary plan implementation.

1. Management Authority

Cities (5c)

Organization of city government in the state of Oregon is defined by ORS 221 and the State Constitution. Voters of a city may also adopt a municipal charter, subject to Article XI, paragraph 2 of the State Constitution.

A city formed under general law is governed by a five-member city council, a municipal judge and other officers as the council deems necessary. The presiding officer of the city council is the mayor, who is appointed by fellow council members at the beginning of each odd-numbered year.

The city exercises full power to control local affairs, except where conflict exists with other laws of the State. A city may regulate all public utilities within a community (ORS 221-420) and may acquire, own and operate municipal utilities within and without the city limits.

Cities generally possess considerable management and regulatory powers pertaining to storm and surface water control. Cities may exercise the right of eminent domain, and may control land use through zoning and development ordinances (ORS 227). Cities are responsible for preparing comprehensive plans in accordance with ORS 197.015.

Cities may issue both general obligation and revenue bonds upon voter approval. The most common type of

bond issued by cities is the Bancroft bond, a type of general obligation bond whose revenues are derived from improvement assessments levied against property owners. In addition, a city may levy taxes to pay principal and interest costs for a bond previously authorized by a vote of the people.

Cities may levy taxes within the constitutional tax base to finance capital expenditures, O&M costs and debt services. Cities may also impose service charges.

Counties (5c)

Counties exercise full power to control matters of county concern and to this extent potentially wield considerable influence and power to deal with drainage problems throughout the county. County organization allows for the creation of a planning commission and requires the adoption of ordinances (ORS 215.050). Oregon general law specifically empowers counties to protect life and properties in areas susceptible to flooding, and to provide for an orderly transition from rural to urban land use (ORS 215.515).

Under general law, the governing body of a county consists of a county judge and two commissioners. A county may adopt a Home Rule Charter in establishing additional county officers or functions (ORS 203.710).

Counties have the right to exercise eminent domain (ORS 203.010) and enjoy a broad range of financial powers. Counties have the right to levy taxes, make special assessments, issue revenue and general obligation bonds, special assessment warrants, and may impose service charges.

Environmental Quality Commission and Department of Environmental Quality (5c)

The Environmental Quality Commission, as provided in ORS 468.010, consists of a five-member commission appointed by the Governor and subject to Senate confirmation. Duties of the Commission are to establish policies for the Department of Environmental Quality (DEQ), the executive and administrative agency formed to carry out the provisions of the State Pollution Control Acts.

Under the direction of the Commission, the DEQ may conduct and prepare studies, investigations, and research pertaining to air and water quality, and may advise and consult with other agencies in such

matters. The DEQ has the full regulatory powers of the State in conjunction with the Federal Water Pollution Control Act (ORS 468.470) and is responsible for enforcing compliance with State water quality standards (ORS 468.735).

The DEQ may offer tax relief to all facilities constructed to reduce or control pollution (ORS 468.160) and may adopt a schedule of civil penalties for pollution control-violations (468.065). The DEQ receives its basic funding from the State general fund, however, general obligation bonds may be sold to establish a Pollution Control Fund (ORS 468.215).

Soil and Water Conservation Districts (5c)

Soil and Water Conservation Districts may be established in accordance with ORS 568.210 to ORS 568.800 for the purpose of conserving and developing the natural resources of the State; including the control and prevention of soil erosion, floods and to conserve and develop water resources and water quality. Districts are governed by a three-member board of directors, but fall under the continuing jurisdiction and policies of the State Soil and Water Conservation Commission.

Soil and Water Conservation Districts are established with an emphasis on cooperating with federal and local governments and landowners. In this respect, districts function primarily as planning and study agencies and have no powers with which to issue bonds or make assessments. Districts may, however, carry out demonstrational projects upon consent of landowners (ORS 568.550) and, subject to the authority of the water policy review board, may plan, manage and control water resources projects (ORS 568.552).

Metropolitan Service District

The organization of the Metropolitan Service District is defined by ORS 268. Metro was established to eliminate the proliferation of regional governments and Special Districts in the Portland area and is authorized to provide for the "metropolitan aspects" of surface water control. In addition, Metro is required to:

a. Define and apply a planning procedure which identifies and designates areas and activities having significant impact upon the orderly and responsible development of the metropolitan

area, including, but not limited to, impact on:

1. Air quality.

2. Water quality; and

3. Transportation.

b. 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, transportation and other aspects of metropolitan area development the Council may identify.

c. Adopt an Urban Growth Boundary for the District in compliance with applicable goals adopted under ORS 197.005 to 197.430.

d. Review the comprehensive plans in effect on January 1, 1979, or subsequently adopted by the cities and counties within the District which affect areas designated by the Council under subsection (1) of this section or the Urban Growth Boundary adopted under subsection (3) of this section and recommend or require cities and counties, as it considers necessary, to make changes in any plan to assure that the plan and any actions taken under it conform to the District's functional plans adopted under subsection (2) of this section and its Urban Growth Boundary adopted under subsection (3) of this section.

Metro has the authority, with voter approval, to levy an ad valorem tax or income tax to carry out the purposes of ORS 268. Metro may impose service and user charges and accept grants and loans for the purpose of financing the planning, design, engineering, construction, operation, maintenance, repair and expansion of facilities, equipment, systems or improvements authorized by ORS 268. Metro may also issue revenue bonds.

Metro's authority to form Local Improvement Districts (LID) to finance remedial drainage control projects was limited by the Legislature in the 1981 regular session. This was the result of public opposition to the formation of a LID for flood control in the Johnson Creek Basin. Although it is now more difficult for Metro to form an LID, under certain conditions and with public support this financial mechanism is still available for drainage management projects.

2. Recommended Management Agency Responsibility:

a. Regional Drainage Management Planning and Coordination:
   The Metropolitan Service District

b. Local Drainage Management:
   Cities and Counties (See Table III-1)

c. Enforcement of Water Quality Standards - Statewide:
   Oregon Department of Environmental Quality

d. Technical Assistance - Soil Erosion and Flood Control:
   - Soil and Water Conservation Districts
   - U.S. Army Corps of Engineers

e. Urban Stormwater Monitoring:
   - Oregon Department of Environmental :Quality
   - U.S. Geological Survey
   - Metropolitan Service District
   - Local Drainage Management Agencies

TABLE III-1

LOCAL DRAINAGE MANAGEMENT AGENCIES BY REGIONAL DRAINAGE BASIN

1. Rock Creek Basin

   Hillsboro
   Portland
   Multnomah County
   Washington county

2. Beaverton/Cedar Mill Creek Basin

   Beaverton
   Portland
   Multnomah County
   Washington County

3. Fanno Creek Basin

   Beaverton
   Durham
   Lake Oswego
   Portland
   Tigard
   Tualatin
   Clackamas County
   Multnomah County
   Washington County

4. Tryon Creek Basin

   Lake Oswego
   Portland
   Clackamas county
   Multnomah County

5. Kellog/Mt. Scott Creek Basin

   Gladstone
   Happy Valley
   Milwaukie
   Clackamas County
   Washington County

6. Johnson Creek Basin

   Gresham
   Happy Valley
   Milwaukie
   Portland
   Clackamas County
   Multnomah County

7. Fairview Creek Basin

Fairview
Gresham
Troutdale
Wood Village
Multnomah County

8. Beaver/Kelly Creeks

Gresham
Troutdale
Multnomah County

ARTICLE IV. CONTINUING PLANNING PROCESS

Section 1. Introduction

The challenges of urbanization throughout the region require that any stormwater quality management scheme be enmeshed in an on-going evaluative process. This Regional Stormwater Management Plan is the initial step in what needs to be a flexible and systematic approach to setting regional stormwater quality management policy. In fact, even as this plan nears completion, new information has been brought forth which promises to greatly help Metro as it redefines its role in regional drainage management issues (see Section C-"Drainage Management Incentives Workshop Report"). Therefore, the purpose of the Continuing Planning Process is to assure that this plan will be able to respond to the stormwater quality challenges which lie ahead. Just as regional policy must be flexible enough to respond to changing circumstances, so too must Metro's role in drainage management. The Continuing Planning Process must also be capable of informing Metro for this purpose.

Section 2. Program Elements

The process proposed here is based on an annual workshop similar to the one described in Section C. By drawing on a broad cross-section of development interests, local government representatives and technical staff, state land use authorities and Metro staff, it will be possible to simultaneously assess the quality of the plan, bring forward new issues and needs, and help Metro evaluate and set its drainage activities. The workshop format serves the additional purpose of bringing together an array of professionals whose work is similar, but who might not otherwise have the opportunity to "compare notes."

To assure that this workshop, the continuing planning process and ultimately the entire plan itself reach the stated objective Metro needs to move ahead into three program areas, subject to the availability of financial resources:

1. Regional Planning Framework - There needs to be a consistent framework for stormwater quality management in the region. Perhaps the biggest impediment to managing drainage and stormwater quality is the absense of a regionwide regulatory framework. This is due largely to the fact that drainage is addressed at the local level through the land use and site development permit processes. This Plan is the result of a thorough analysis of regional drainage basins and drainage regulations. As such, it needs to be presented at the local level as the first step in establishing that consistent framework.

Merely adopting the plan, however, will not ensure the coordination within drainage basins needed for effective management and for meaningful participation in the continuing planning process. Metro needs to explore the formation of Drainage Basin Councils as a means for speeding plan adoption at the local level and to take responsibility for the continuing planning process.

2. Regional Drainage Information Clearinghouse - The regional plan presented here is based on the most current information available. The effectiveness of this plan depends not only on an ongoing monitoring effort, but on the use and evaluation of state of the art management techniques as well. Yet, as is noted in Section C local technical staff, those at the cutting edge for the implementation of this management plan, lack time and resources for monitoring the effectiveness of management guidelines, researching and evaluating management techniques, or even updating existing resource inventories. For a flexible and appropriate continuing planning process to take place, this region needs a technical information and resource inventory service capable of augumenting local efforts and providing the support needed for meaningful and creative management.

   Therefore, the continuing planning process must be built on a two-way flow of technical information from Metro to local government and of management experiences from local government to Metro. To establish this flow of information, the cornerstone for the continuing planning process, Metro needs to establish a regional technical information clearinghouse, in cooperation with other agencies like the SCS, based on an information needs assessment carried out by Metro staff.

3. Ongoing Public Involvement - Finally, even with the best of consistent regulatory frameworks and information systems, the continuing planning process cannot become well-established in the absence of public understanding for and support of stormwater quality management. Without a knowledgeable constituency for water quality management, metro cannot hope to find the systematic and on-going participation in the continuing planning process needed to make effective management a reality. Metro needs to begin immediately to support local government efforts and the goals of this plan by engaging in projects designed to communicate stormwater quality management needs and principles to a larger audience. Sound water quality management

yields many benefits to a community. Yet, to most people in this water-rich region, the implications of no management are far from clear.

The continuing planning process, therefore, will be the culmination of these three activities, especially the second, in an annual drainage workshop. By putting forth the plan as a consistent regional regulatory framework, establishing a two-way flow of information between Metro and local technical staff, and building a regional water quality and drainage management constituency, Metro will be in a good position to evaluate and update this Regional Stormwater Management Plan.

In conclusion, no plan is final but an inflexible plan can have permanent, often detrimental, effects. The management plan put forth here cannot, by itself, guarantee effective stormwater quality management throughout the region. However, it is our hope that this continuing planning process will provide a mechanism for systematically striving towards that goal.

Section 3. Drainage Incentives Workshop Summary

On Wednesday, December 16th, about 30 planners, engineers, consultants, representatives of state and local governments, academicians, and representatives of citizens' groups gathered to discuss the use of incentives for implementing Metro's Regional Stormwater Management Plan. Of more general interest was a discussion of what Metro's role in regional drainage issues ought to be.

The workshop was structured around the four policy areas presented in the proposed management plan. Briefly, the policies are:

1. To minimize on-site erosion during site preparation and construction.
2. To minimize streambank and channel erosion by controlling the amount and rate of stormwater runoff.
3. To manage the 100-year floodplain and floodway in order to protect their natural function, and minimize water quality degraduation and property damage.
4. To protect and enhance the capacity of urban streams to provide habitat for fish and riparian wildlife.

Each policy has several specific guidelines which, when considered together, could lead to the implementation of the policies. The purpose of the workshop was to investigate the creation and use of incentives that would encourage guideline compliance.

The workshop participants were divided into three groups. Each group discussed one of the first three policies and

guidelines plus the fourth policy and its guidelines. In addition, each group set aside some time to discuss, in general terms, the incentive concept and to make some specific recommendations concerning Metro's role in regional drainage issues.

What follows is a report for each group prepared by each group leader, some general conclusions about incentives and Metro's drainage role and a summary of the workshop evaluation sheets.

Group 1

Policy I guidelines revolve around the preparation of Temporary Erosion Control Plans (TECP). Group 1 came to the concensus that incentives would not be effective unless used in conjunction with regulations. Incentives could complement regulations but they could not replace them. In addition, the following problems with the incentive approach were noted:

1. For the incentive approach to work, there must be something that local government can offer to developers in return for establishing TECPs. One of the most effective concessions is to relax existing regulations. Therefore, there must first be a regulatory framework for erosion control. This point is reinforced by the fact that in some cases it might be more profitable for a developer to decline an incentive rather than to pay the cost of a TECP.

2. In some cases, the incentive idea is fairly well established at the local level, where trade-offs for open space, or for protecting natural drainageways, are already being given. However, there does not seem to be a direct correlation between possible incentives, such as density bonuses, and erosion control. Finally, commercial or industrial developments would require a different set of incentives than residential developments.

3. An incentive designed for a developer might not be applicable to a builder who disturbs the site equally as much.

4. Ultimately, inspection of actual work done and enforcement of ordinances is still necessary with the incentive approach. Whereas incentives might encourage compliance with guidelines, they themselves cannot really reduce inspection and enforcement costs. The key here is to fully utilize existing staff and other organizations with expertise, like the Soil Conservation Services for inspection and enforcement.

Despite these problems, some practical applications of the incentive approach were discussed:

1. Educate developers, builders and building officials about the technical, legal and public relations problems associated with insufficient or ineffective erosion contol measures. Once they are aware of these problems they may be more willing to engage in TECPs.

2. Allow temporary detention ponds to be used as an additional building site after construction is completed. This incentive idea could be expanded to encompass the general concept of multiple use of erosion control facilities.

3. Substitute erosion control measures for other site development requirements. The danger here is that these other requirements (parking lots, landscaping, etc.) might then appear to be arbitrary.

4. Reduce or stage permit fees in exchange for a TECP. Or, a separate site development permit might be required with a fee schedule based on the presence and/or adequacy of the TECP.

Group 1 did not discuss policy IV, but it did come up with some specific recommendations for Metro's drainage role:

1. Metro needs to generate uniform regional policies to facilitate consistency.

2. Metro should evaluate and expand on the mechanisms in Appendix H of the Stormwater Design Manual (i.e., repackage). This should include:

   - Which mechanisms are most appropriate for each area of the region, e.g., determining a good seed mix for different soil types within the region. The SCS has already done some of this.
   - Cost estimates to help determine how much soil erosion control is reasonable, economically, for each jurisdiction.
   - More information about conditions under which erosion control mechanisms are effective (similar to what has been done for the catch basin mechanism in the technical studies).

3. Metro should provide information about its experiences (for example, an evaluation of why some of Metro's projects have failed) so that others can learn from them.

4. Metro should compile data on all of the basins within the region. This would be a valuable resource for use by all local governments. For example, flow data for all the creeks is needed but lacking.

5. Metro should collect and make available examples of stormwater runoff, drainage and erosion control ordinances developed by other jurisdictions around the country.

6. Public education to build a drainage constituency is necessary.

7. Metro should investigate the legal liability of individual jurisdictions with respect to drainage. This would help establish a more consistent policy in the region and also serve as the rationale for local government involvement in drainage management.

Group 2

The focus for Group 2 was the minimization of erosion of channels and streambanks. The key factor here is controlling the amount and rate of stormwater flows. Prior to discussing the policy itself, several general points were made. As in Group 1, participants in this group made the point that incentives are effective only when they, in effect, let you out of something you have to do. In other words, incentives in the absence of a more general regulatory framework are likely to be ineffective. And incentives should be considered as part of a range of options because it is unlikely that they can do 100 percent of the job.

Participants felt that Metro should pursue some kind of regional plan with cost-share funding for planning and improvements. Perhaps Metro's biggest problem right now, however, is its drainage management image at the local level. Whatever policy is pursued, a central premise must be equity, especially because new development cannot be expected to correct all existing problems.

Finally, the cost to the developer cannot be forgotten. (More than one participant wondered where the developers were...see the evaluation summary.) In addition, the question of liability needs to be investigated; does an incentive relieve the developer of any liability, or does it transfer any liability to local governments?

The following general comments were made regarding policy II:

1. The policy should probably be split into two, one dealing with the rate and amount of stormwater runoff and another dealing with streambank and channel erosion.

2. Recreation value of urban streams and rivers ought to be a strong selling point for the need for policy II and its guidelines. The Tualatin River was used as an example of how streambank and channel erosion have diminished recreation potential.

3. With respect to the guidelines:

   - Percolation needs to be evaluated on a site-by-site basis, given local soil conditions. Similarly, turbidity is difficult to monitor and its limitations are hard to enforce. Sediment is best controlled at the source.
   - There is a potential conflict between piping and natural drainageways because developers prefer pipe drainage that allows maximum development of their site.
   - The crux of the issue is maintenance. Without maintenance, even the best drainage structures will not perform. Enforcement, implementation and maintenance responsibilities need to be spelled out and to be consistent for any one basin.

Three possible incentives were identified:

1. A charge for systems development could be decreased when downstream drainage affects are considered, just as it is decreased when transportation impacts are taken into account and provided for.

2. It was suggested tht Metro could offer technical services to be used in review of site plans. As an independent third party, Metro could take a proposal, review it and model its effects on downstream drainageways and ponds. Metro could also provide ultimate-use scenarios for constructing these models. Such a service would back-up local government staff and provide expedient review of developer's plans.

3. Park or open land could be dedicated as part of a drainage system. This points to the incorporation of drainage concerns into existing Planned Unit Development (PUD) reviews or public dedication processes, an expansion of existing multiple-use horizons.

Group 2 also identified a real need for education about drainage processes. More specifically:

- Promote the "true cost" argument for preserving and using natural drainageways; they are valuable areas and, when considered in the context of the basin, natural drainageways are cost-effective.
- Inform new home buyers that they have also purchased a part of the drainage system and should be alert to the benefits and responsibilities.
- Develop as a long-term strategy, a constituency for drainage needs.

Four points were made regarding policy IV:

1. Guideline C, the one dealing with public education, is the place to start. It will probably be the most significant in the long run. However, if existing regulations were adequately enforced, there would be little need for new policies.

2. Be careful not to oversell the "retrofitting" of urban streams as fisheries. There are potential fish vs. people conflicts when dealing with the rate of flow and maintenance of channel vegetation.

3. Perhaps the greatest incentive for this policy is the aesthetic value of a fish stream. However, the benefits derived are local unless there is some provision for public access.

4. The importance and relevance of water quality needs to be publicized. Waste oil recycling and drinking water supply are two aspects to emphasize.

For both policies II and VI the point was made that cash was the best incentive; a decrease in a systems development charge appears to be an attractive mechanism. However, the charge is not used uniformly, if at all throughout the region, making it unlikely that a single incentive exists which would be effective region-wide.

There were three main roles identified for Metro in regional drainage issues. First, although several units of local government are now making progress in dealing with water quantity, virtually no one is dealing with water quality. Metro should orient its effort at regional water quality needs.

Second, education/information is a real need in the region. Two areas need to be addressed:

1. Materials and information for the public. We do not have a broadbased constituency for drainage in this region. This support is needed before any wide-spread drainage efforts can succeed. Metro should attempt to establish and build that constituency.

2. Materials, information and training for local government staff. Local planners and engineers need tools distilled out of the mass of information available, tailored to the conditions in their jurisdictions. Metro should coordinate training workshops, establish an information clearinghouse, and continue to work with the Soil Conservation Service and others to develop technical information applicable and useful to local government needs.

Finally, Metro should initiate a legislative effort to get laws on the books that encourage basin-wide planning and drainage management. This is a long-term project that needs to begin now.

Group 3

Group 3 discussed policy III which deals with managing the floodplain to minimize water quality degradation and property damage. The suggested guidelines for accomplishing this policy included:

1. The establishment of Regional Drainage Councils (RDC) to coordinate drainage management basinwide.

2. Coordination of local drainage plans and policies within a basin

3. Adoption of regulations necessary to qualify for the National Flood Insurance Program.

4. Retention of floodplain and floodway land as open space.

The group felt that there were sufficient incentives built into the National Flood Insurance Program to ensure its implementation. The concept of RDCs was well received and if established, the RDC itself could generate secondary incentives to promote drainage management. The group felt that Metro should take the first step by establishing a framework for RDC. One incentive that Metro might offer is administrative staff support, such as meeting notification, minutes, meeting rooms, etc. This could be offered as a match for local government staff commitments to serve on the RDC. It was suggested that only one RDC be established for the entire Metro area with eight subcommittees, one for each basin. This could be an

alternative to the existing Water Resources Policy Alternative Committee. Another suggestion was the formation of an RDC for one basin on a trial basis.

Several tasks were laid out for the RDC including:

1. Review existing data, identifying needs and compiling inventories of:

    a. marginal floodplain lands (a definition of "marginal" is required);
    b. fish production areas;
    c. public lands; and
    d. existing drainage policies and ordinances.

2. Request drainage and floodplain studies from federal agencies such as the SCS, U.S. Corps of Engineers, U.S. Geological Survey.

3. Review and coordinate local plans and policies within each basin.

4. Promote recognition for good drainage management such as awards to developers or local jurisdictions for model drainage projects.

A secondary benefit or incentive which the RDC could provide is the opportunity for sharing staff expertise among local governments, federal agencies and the private sector.

The last guideline in policy III recommended setting aside floodplain land as open space for flood storage. The group felt this land should be acquired. The first step should be the inventory of "marginal" lands.

A number of ways for acquiring these lands or otherwise compensating property owners were suggested, including:

1. The National Flood Insurance "constructive loss program";

2. Zoning and easements;

3. Tax deferral or abatement;

4. Land trust donations; and

5. Land swaps.

The biggest problem associated with public acquisition of floodplain lands was maintenance. The suggested options were private maintenance through something like a homeowners association, public maintenance as part of a

park district, or natural maintenance, i.e., allowing the property to revert back to its natural state. Each property's maintenance requirements will be unique.

The group also discussed policy IV which deals with "habitat for fish and other aquatic organisms." The first suggestion was that the policy be changed to "Enhancement of Riparian Habitat." This would include birds, mammals, vegetation, etc.

In addressing the first guideline, it was felt the existing Division of State Lands removal/fill permit system was working but that it could be improved with an inventory of fish production areas. Jay Massey indicated this information could be provided by the Oregon Department of Fish & Wildlife (ODFW) as a tool for reviewing removal/fill and other permit requests. The issue of enforcement was discussed and basically it was felt the best way was to educate the public regarding existing laws.

The second guideline addresses preservation of canopy vegetation. It was suggested that this be changed to "preserve or replace" to provide flexibility. It was felt that the best way for implementing this guideline was to incorporate it into the zoning and conditional use permit processes. One mechanism of enforcement suggested was the posting of an improvements bond (cash or negotiable security in escrow) by the developer. This tool can be used to ensure any conditional use requirement.

The third guideline deals with community education. It was suggested that Metro take the lead in this area. This could be accomplished as an offshoot of the Recycling Switchboard. Other mechanisms for community education included using employers such as Tektronix, Publishers Paper, etc. to spread the word to their employees. Service groups are also effective for this purpose.

The last guideline addresses fish enhancement. The Department of Fish and Wildlife has a cooperative program which provides eggs to groups interested in fish-rearing projects. The program to date has not been tried in the Portland metropolitan area. Metro could act as an information clearinghouse in this area and help to promote fish-rearing projects by local civic groups.

Conclusions

The overriding conclusion to be drawn about incentives is that they will probably be ineffective in the absence of a larger regulatory framework. Incentives cannot totally substitute for regulations and it is unlikely that a single incentive exists which could be applied throughout

the region. Incentives, like regulations, need to be tailored to local permitting processes, landscapes and needs.

At this point, there needs to be a consistent regulatory framework for drainage in the region. Because drainage regulations are best implemented and enforced at the local level, a consistent drainage policy must be developed and considered within each of the Metro jurisdictions. The Regional Stormwater Management Plan is a step in that direction but it needs to be adapted by each jurisdiction to suit its particular characteristics and needs.

Perhaps the biggest obstacle to the creation and adoption of a regional drainage policy is the lack of a constituency for drainage management and stormwater quality. This is where Metro can play a big role in regional drainage issues. there are three central functions for Metro with respect to regional drainage issues:

1. Metro should take the lead for managing water quality in the region. There needs to be a coordinated approach to water quality management and policy, as well as an on-going effort for monitoring and research. This should be pursued in spite of local government's staff or resources for this.

2. Coordination of policy and program implementation has always plagued drainage efforts in the region. Metro can be a valuable coordinator of regional drainage efforts, perhaps through the formation of one or several of the Regional Drainage Councils proposed in policy III guidelines.

3. There is a need for information about drainage and stormwater quality. Local government staff need technical information distilled into a form they can apply. They also need to have drainage methods evaluated with respect to specific soil, slope, and cover conditions. They need cost data for drainage management plus training workshops to acquaint and reacquaint staff with drainage management and stormwater quality concepts. Also, there needs to be a coordinated public education effort to acquaint citizens with drainage concepts and processes and with water quality needs. Without an educated citizenry, there is little hope for broadbased community support for drainage and water quality programs. Metro is in a good position to efficiently provide these information services to the region.

Evaluation

Ten evaluation sheets were received. A question-by-question analysis follows:

1. All those responding felt that the workshop format was a useful way to discuss policy issues. Breaking into subgroups and the informal nature of the discussions were favored. However, if it is done again, most respondents felt that there needed to be a better balance of interests. Specifically, the absence of developers was noted. Metro did invite five developers, recommended by the Home Builders Association. All five received workshop materials in advance. However, several conflicting last-minute meetings prevented their participation. Members of the Metro staff are now making an effort to contact these developers individually to discuss the workshop and to better understand their concerns.

2. Respondents felt that the workshop could have been improved in a number of ways. Better representation, as already noted, headed the list. A workshop summary was requested. Some felt that the group leaders let the discussion stray too much, although it was noted that people did have a lot they wished to discuss. If another workshop is held, it was suggested that more specific proposals be produced for discussion.

3. Most people liked the chance to discuss drainage issues with other professionals in a relaxed setting. The broad jurisdictional representation was appreciated as was the open atmosphere for discussion. Lunch went over well as did the basic concept underlying the workshop.

4. Other proposed topics for similar workshops included almost anyting with a specific regional orientation, such as public facilities financing; solid waste management; transit planning; regional urban growth; parks, recreation and open space; wildlife augmentation; and erosion and sediment control model ordinances.

5. & 6.
All respondents wanted to be alerted of future workshops. Other comments included: "The workshop accomplished its purpose," "Metro needs to initiate legislation to encourage drainage management utilities," "Metro has a role to play but changes in organizational structure are needed to make it more effective," and "Hang in there!"

From the Metro staff perspective, we are very pleased that the discussion was as productive as it was. We received good feedback on the policies, on incentives, and we have a much better appreciation of what Metro's role should be. We, too, were very disappointed that the developers were not there but we will work to ensure better representation in the future. Finally, we deeply appreciate the time and effort that went into spending the day with us.

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3. Drainage Management in the Johnson Creek Basin, Staff Report and Recommendations to the Metropolitan Service District Board of Directors, November 1975.

4. Technical Supplement 13, Stormwater Management Design Manual, Metropolitan Service District, Spring 1980.

5. Portland-Vancouver Metropolitan Area Water Resources Study, US Army Engineer District Portland, Corps of Engineers, 1979.
   Regional Drainage Report and Appendices

   a. Butternut Creek Basin Plans
   b. Salmon Creek Basin Plans
   c. Literature Review
   d. Damage Reduction Measures
   e. Drainage Management Planning Manual
   f. Urban Conservation Guide for Washington County, Oregon. USDA Soil Conservation Service in cooperation with Washington County Soil and Water Conservation District.

6. Regional Stormwater Management Inventory, Metropolitan Service District, April 1980.

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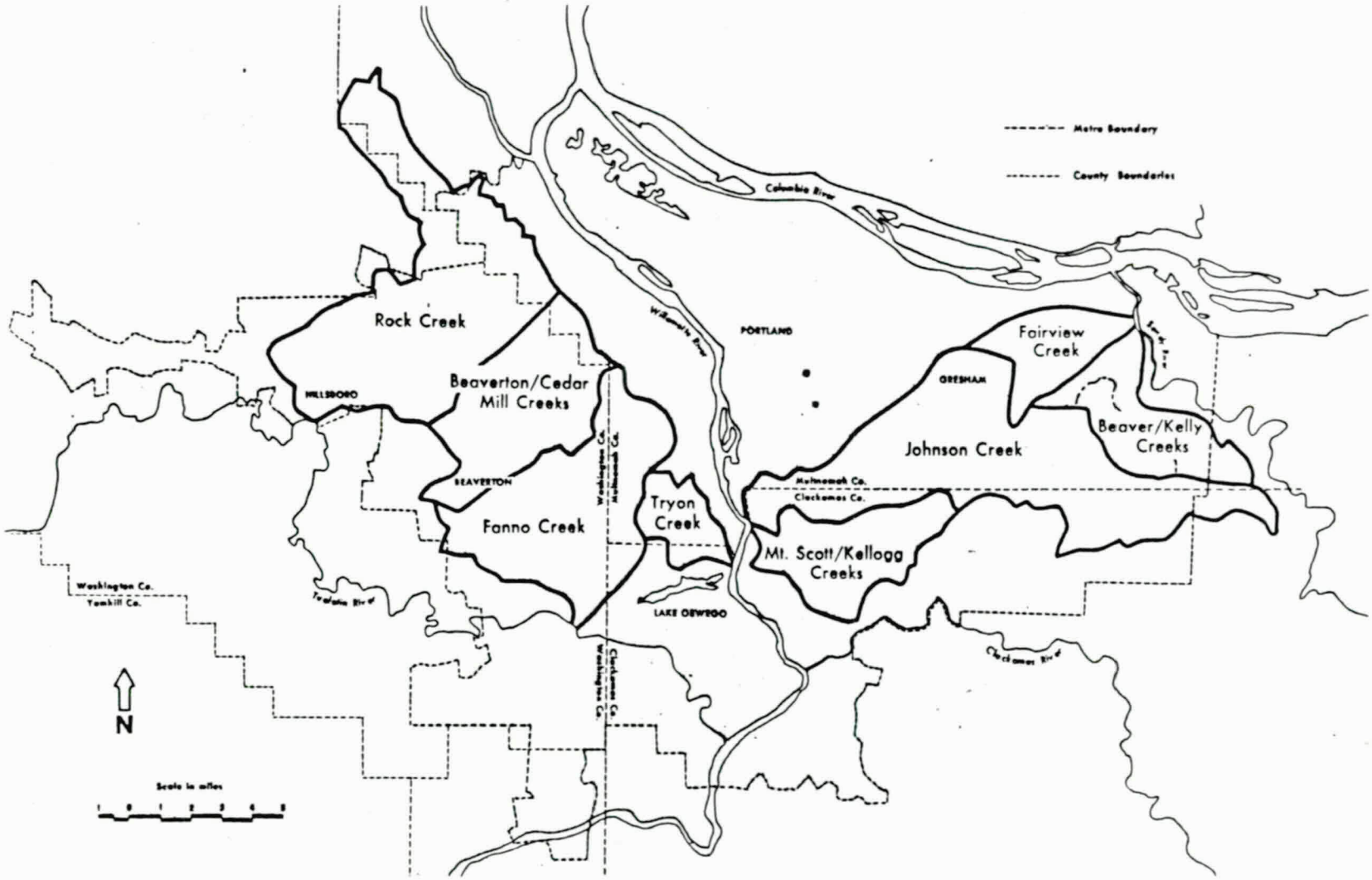
REGIONAL STORMWATER MANAGEMENT PLAN

IV.

REGIONAL DRAINAGE BASIN PLAN MAPS

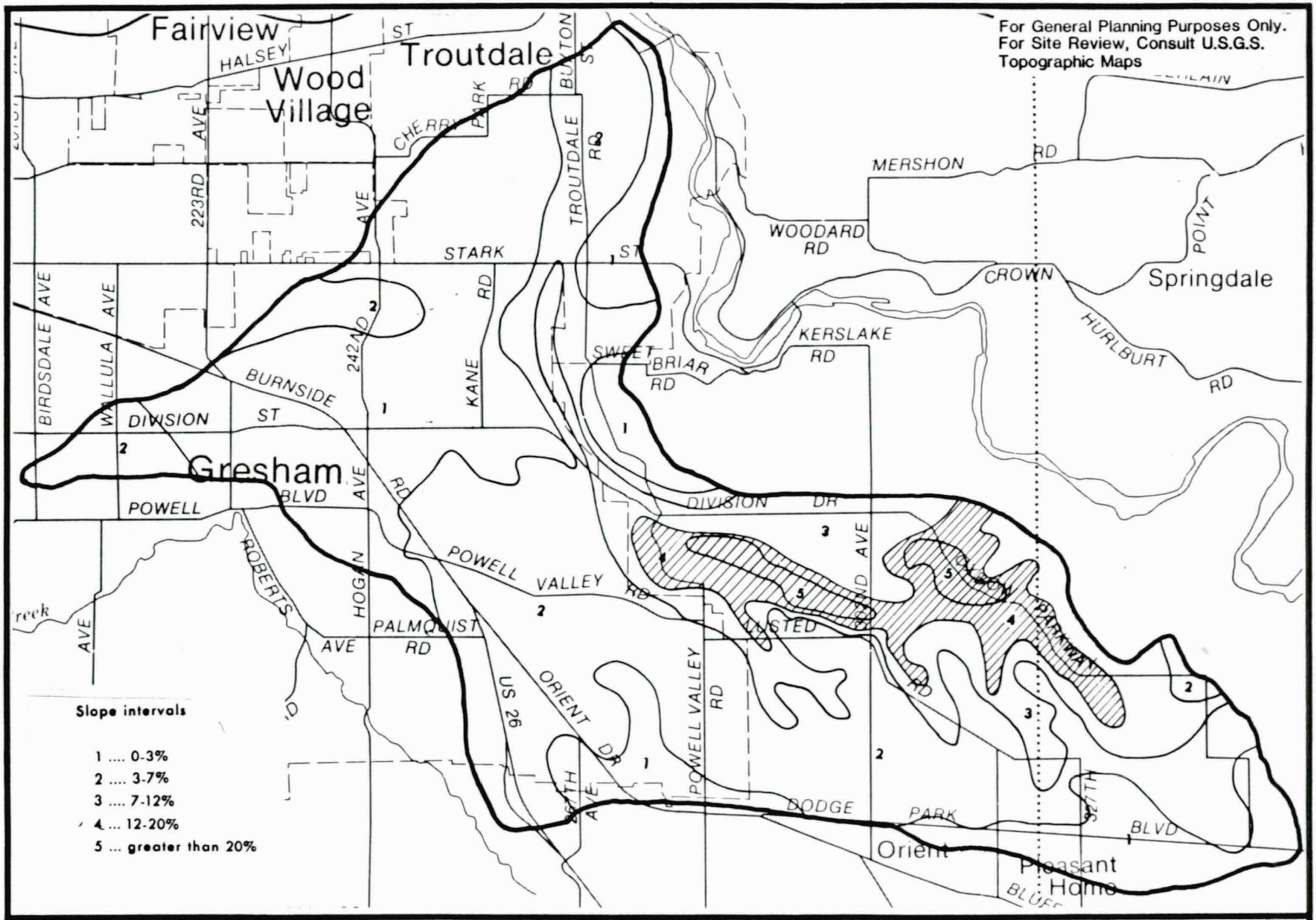
February, 1982



METRO

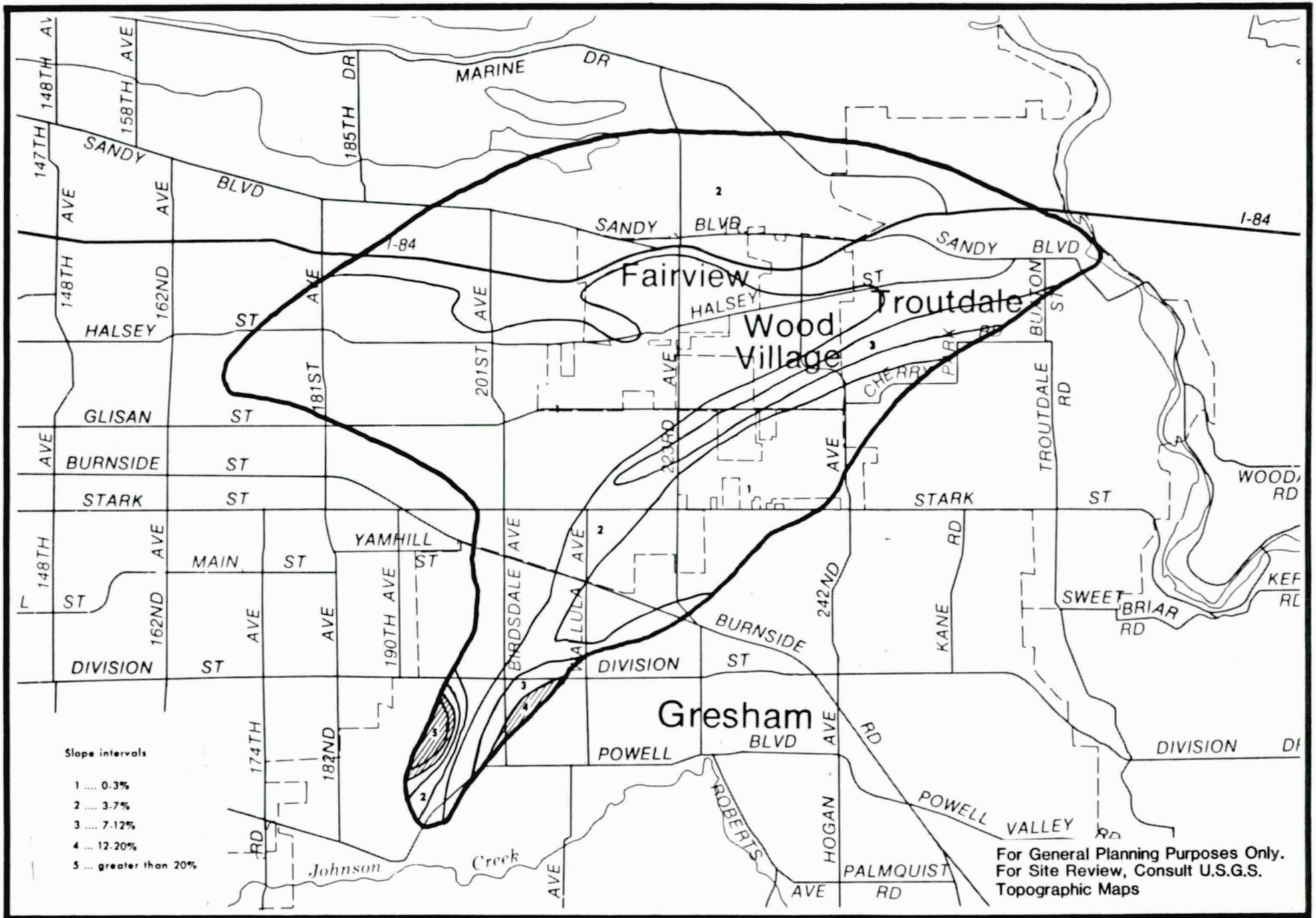
Regional Stormwater Management Plan

REGIONAL DRAINAGE BASINS



Regional Stormwater Management Plan

BEAVER/KELLY CREEKS BASIN



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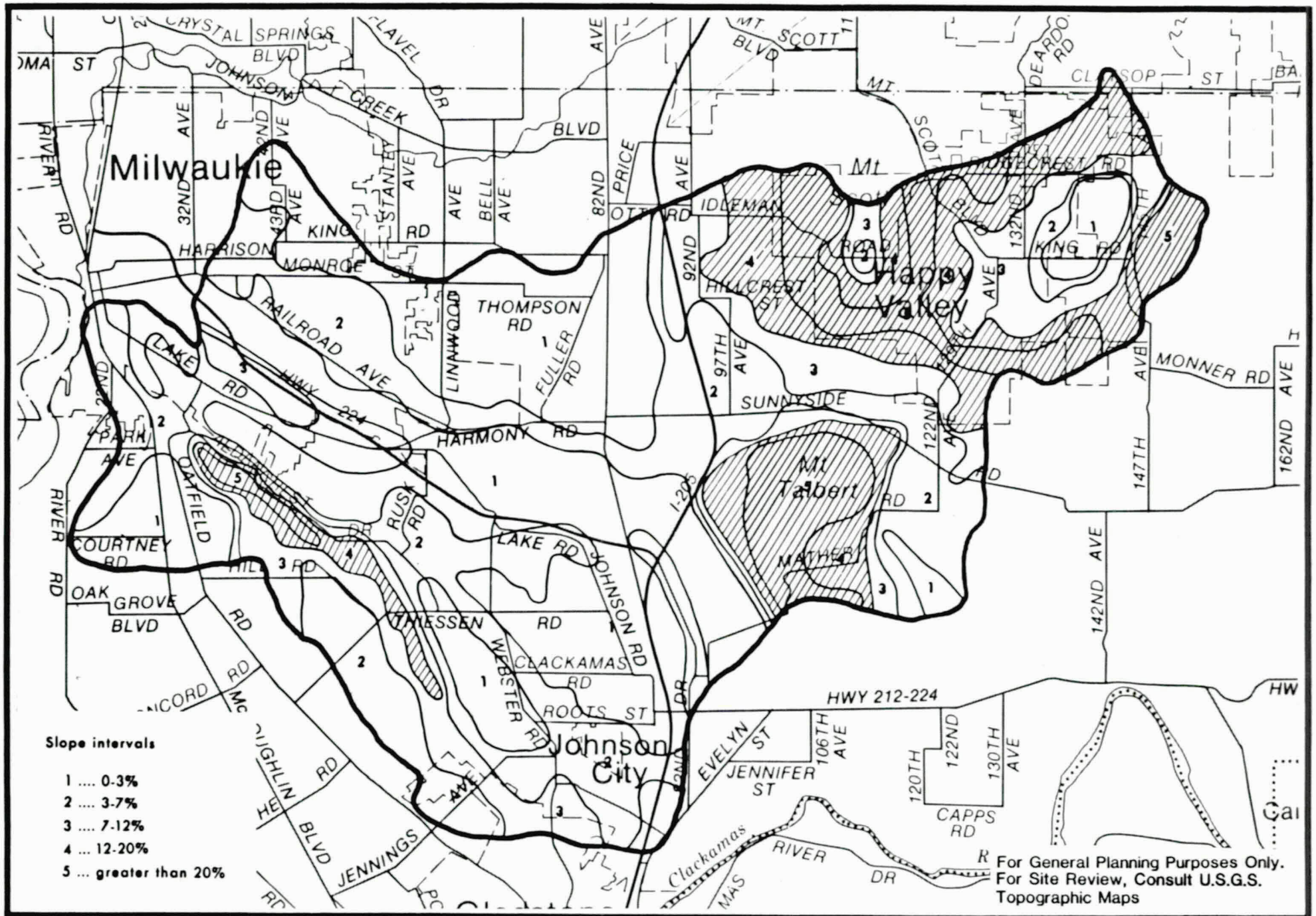
Regional Stormwater Management Plan

FAIRVIEW CREEK BASIN



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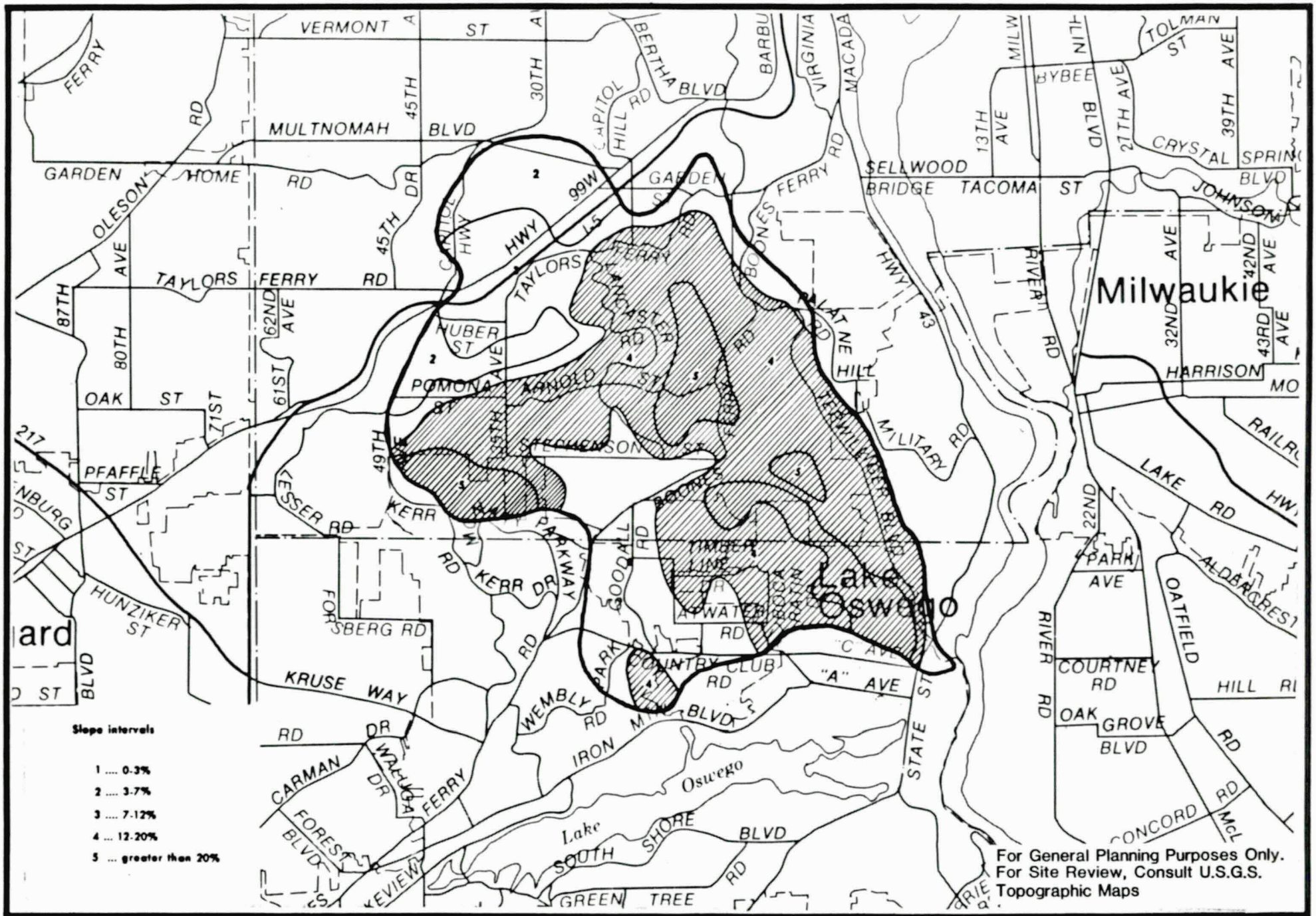
Regional Stormwater Management Plan

MT. SCOTT/KELLOGG CREEKS BASIN



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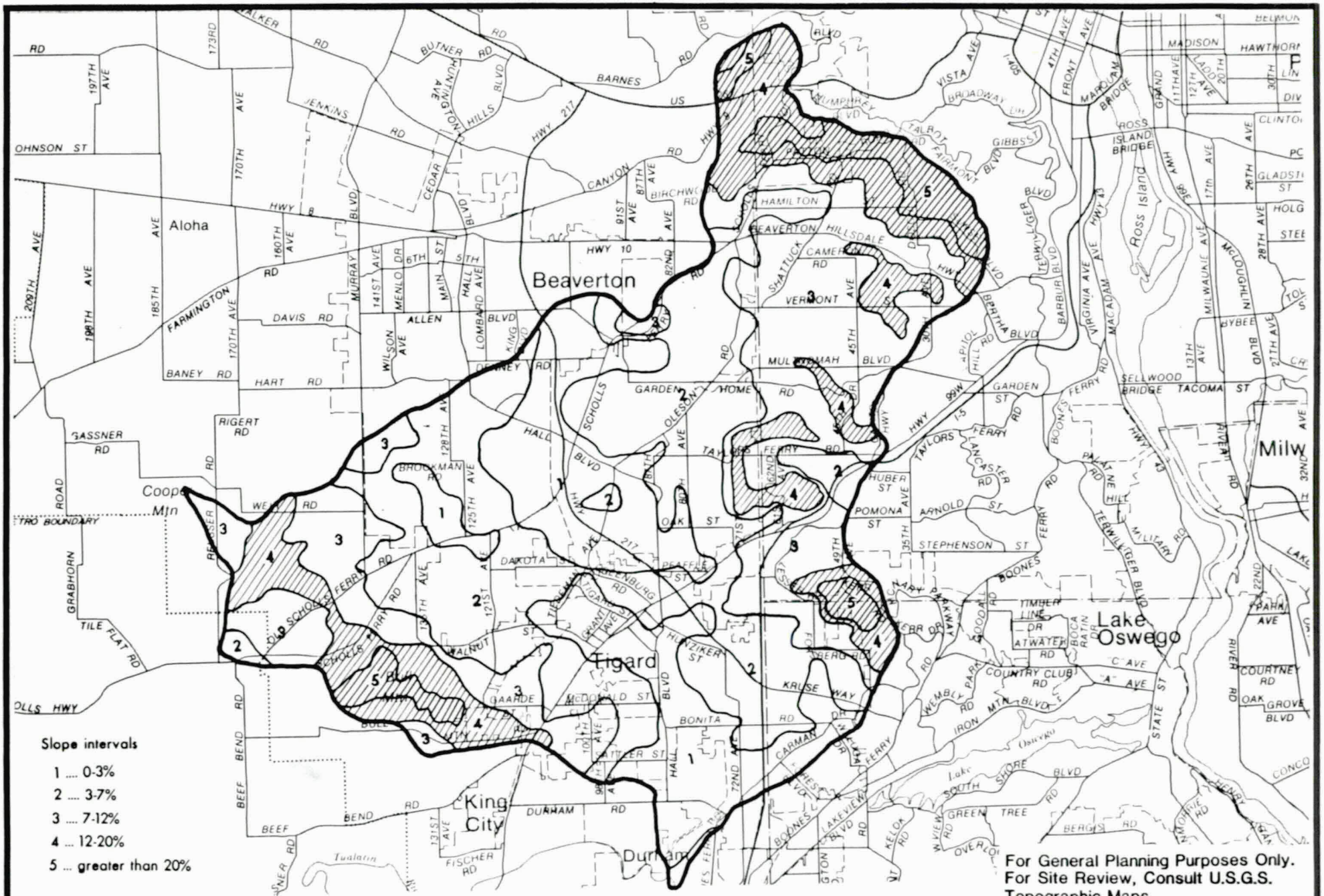
Regional Stormwater Management Plan

TRYON CREEK BASIN



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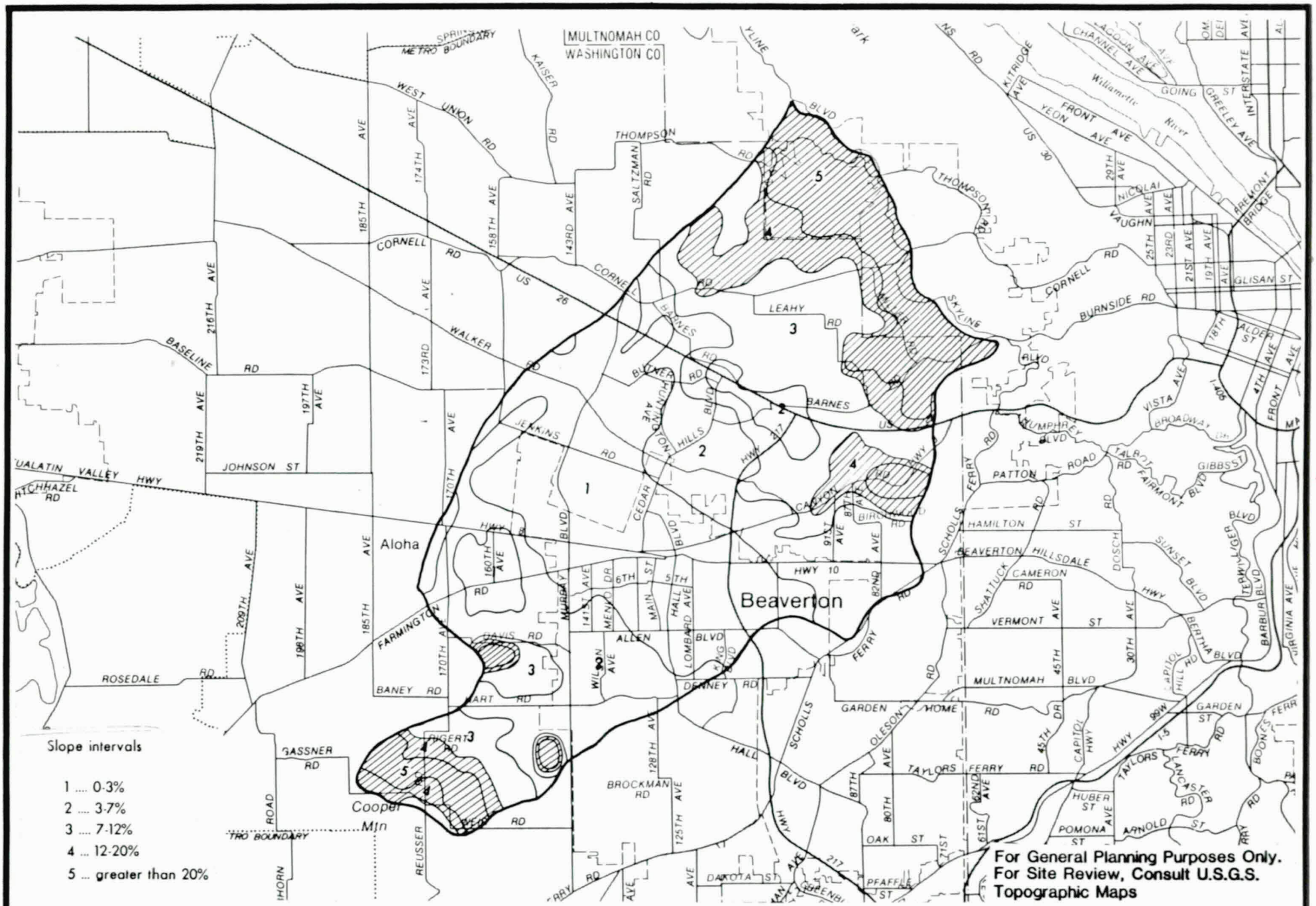
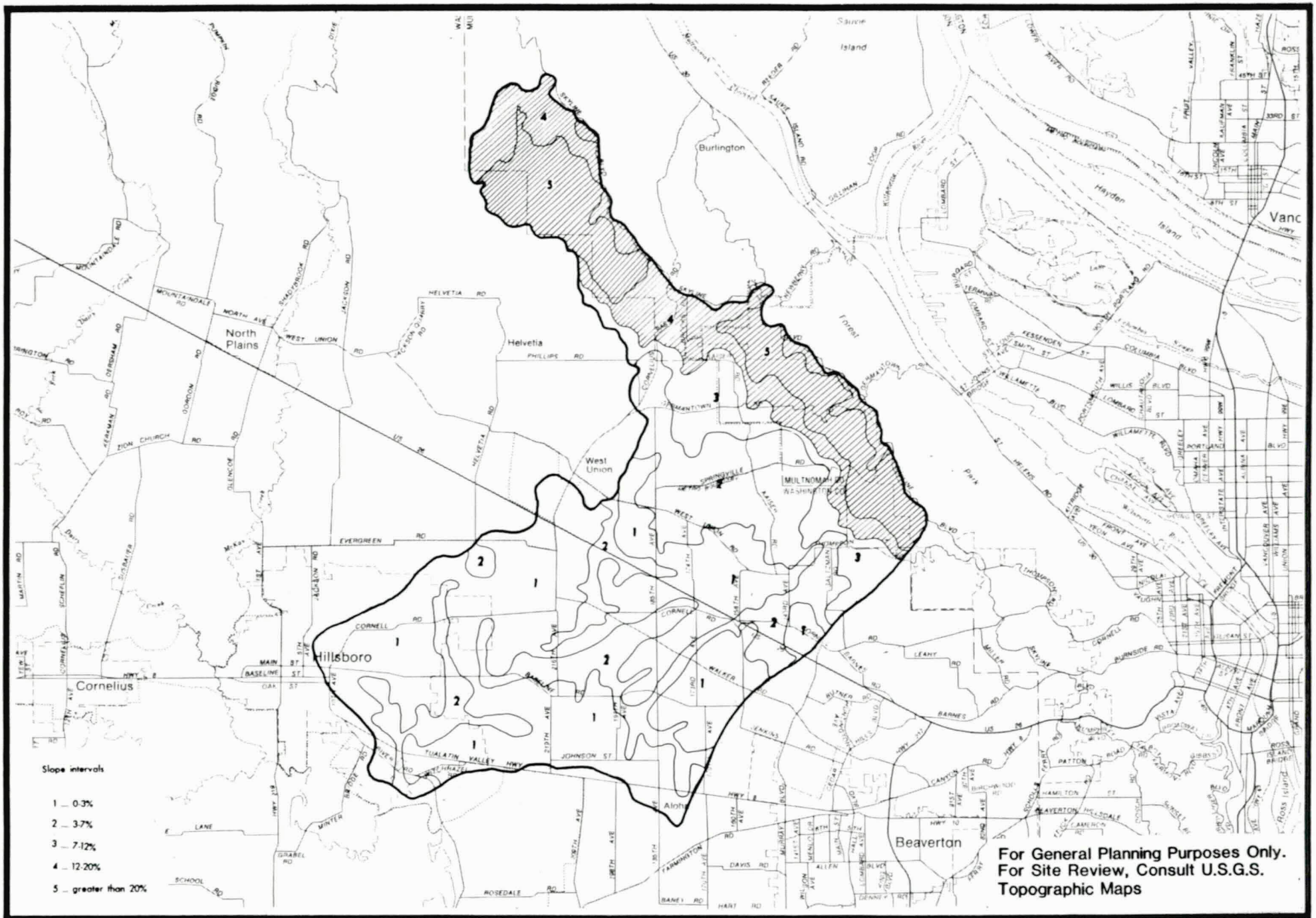
Regional Stormwater Management Plan

FANNO CREEK BASIN



Regional Stormwater Management Plan

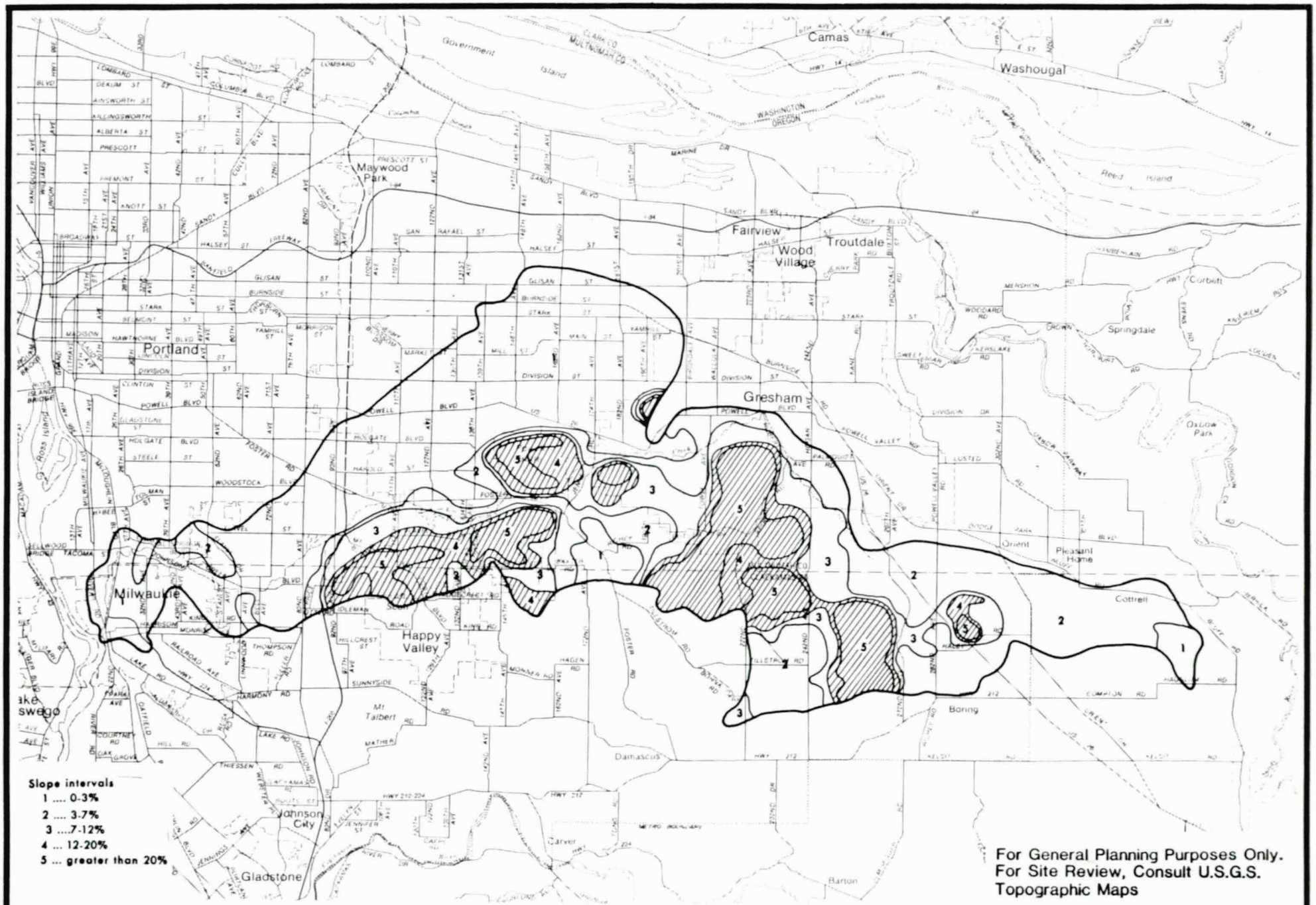
BEAVERTON-CEDAR MILL CREEKS BASIN



METRO

Regional Stormwater Management Plan

ROCK CREEK BASIN



METRO

Regional Stormwater Management Plan

JOHNSON CREEK BASIN

Agenda Item No. 5.1
March 4, 1982

A G E N D A M A N A G E M E N T S U M M A R Y

TO: Metro Council
FROM: Executive Officer
SUBJECT: Adoption of Regional Stormwater Management Plan

I. RECOMMENDATIONS:

A. ACTION REQUESTED: Adoption of Ordinance No. 82-128 for the purpose of adopting the Regional Stormwater Management Plan.

B. POLICY IMPACT: As the Areawide Waste Treatment Management Planning Agency for the region, Metro is responsible for implementation of and continuing planning for the "208" plan. When CRAG adopted the "208" plan in 1978, the plan noted that more extensive work needed to be done prior to establishing a regional stormwater management plan. A regional stormwater management plan is consistent with both the national water quality goals established in the "208" legislation and Metro's charge in ORS 268.390 to create a procedure for dealing with the impacts of development on regional water quality. This plan speaks specifically to the effects of new construction and development on region drainageways and subsequent water quality concerns. This plan will replace the Johnson Creek Interim Development Guidelines.

C. BUDGET IMPACT: Adoption of Ordinance No. 82-128 will have an impact on the Metro budget to the extent that the Council wishes to implement certain sections of the plan. The provisions of the management plan are not mandatory, but the continuing planning process for plan implementation and development offers Metro several alternatives for future water quality involvement. Little attention is being paid to water quality concerns by local jurisdictions; Metro's assistance in this instance has been requested. This plan is the final component of a $395,000 "208" planning grant.

II. ANALYSIS:

A. BACKGROUND: In 1975 CRAG was designated by the Governor as the Areawide Waste Treatment Management Planning Agency for Washington, Multnomah and portions of Clackamas Counties pursuant to Section 208 of the Federal Water Pollution Control Act Amendments (PL92-500). As the "208" agency CRAG initiated a $1.8 million, two-year study to develop a plan to meet the federal goals of fishable, swimable waters by 1983. The plan which resulted, as well as the 14 support documents, was adopted by the CRAG Board in June 1978.

In January 1979, CRAG was merged with the Metropolitan Service District (MSD) to form Metro. The "208" designation was transferred by the Governor to the new agency and the planning area was reduced to conform to the new Metro boundary. Areas outside this boundary came under the jurisdiction of the DEQ. Since 1979 Metro has continued to administer the "208" plan and utilized it as a tool in developing the Urban Growth Boundary and in reviewing local comprehensive plans.

The Regional Stormwater Management Plan is the result of an intensive survey and investigation of regional water quality needs. Technical studies were undertaken by PSU, under contract to Metro, which identified drainage basins of regional concern, monitored in-stream water quality, profiled drainage basin hydrology and land use, and evaluated selected current drainage management practices. The data gathered was then used to formulate the plan such that its provisions relate to specific management needs. This was the task identified by CRAG planner in 1978 and this plan is the culmination of that effort.

This plan will become a new section in the existing "208" plan and Metro Code. It will be used as a reference standard by local jurisdictions as they begin to grapple with stormwater management at the local level. It will serve as a program guide for Metro as it begins the task of establishing a comprehensive regulatory framework for drainage management within the regional drainage basins.

B. ALTERNATIVES CONSIDERED: Staff considered the "do nothing" alternative. However, in light of the technical reports, it was felt that the region could not afford to sit idly by as development continued and water quality was likely to deteriorate. The plan presented here was developed after extensive consultation with the Water Resources Policy Alternatives Committee over the past year. This Committee was established in 1975 to provide Metro, then CRAG, staff with technical and policy advice regarding the "208" plan and planning process. On January 27, 1982, the Committee moved unanimously to urge the Metro Council to adopt this plan.

C. CONCLUSION:

1. Metro, pursuant to ORS 268.390(1)(b) and 268.390(2) is mandated to prepare and adopt a functional plan to control metropolitan impacts on water quality.

2. Metro, as the Areawide Waste Treatment Management Planning Agency, is mandated to prepare and adopt a plan capable of meeting national water quality goals, including a plan to ameliorate the effects of construction practices on water quality in streams.

3. A systematic approach to stormwater quality management throughout the region and, especially, within the regional drainage basins, is essential for successful water quality management.

4. Ordinance No. 82-128 should be adopted as a meaningful exercise of Metro's mandate and to facilitate water quality management throughout the region.

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8.2 Public Hearing on Ordinance No. 82-128, For the Purpose of Adopting and Implementing the Regional Stormwater Management Plan. (First Reading)

Motion that the ordinance be adopted. (Oleson/Rhodes)

Motion to amend the ordinance with the three amendments proposed in the memo from Couns. Rhodes and Oleson; carried unanimously. (Rhodes/Bonner)

There was no one present who wished to speak during the public hearing.

8.3 Public Hearing on Ordinance No. 82-130, An Ordinance Relating to the Approval and Execution of Public Contracts and Repealing Ordinance No. 80-103. (First Reading)

Motion that the ordinance be adopted. (Burton/Schedeen)

Motion to amend the ordinance to delete Section II.C.4.g. in the contract procedures; carried. (Rhodes/Kirkpatrick; Etlinger, Banzer and Schedeen voting "no")

General discussion of the contract procedures.

There was no one present who wished to speak during the public hearing.

9.1 Executive Officer's Report.

Executive Officer Gustafson had no report at this time.

9.2 Committee Reports.

Coun. Berkman stated the Council Audit Committee would meet some time next week.

Coun. Rhodes reported the Services Committee had received an informative update on gas recovery at their last meeting.

Presiding Officer reported that the Task Force on Fiscal Management would meet at 5:30 PM on Wednesday, March 3.

The meeting adjourned at 10:20 PM.

Respectfully submitted,

Sue Haynes

Sue Haynes, Clerk of the Council

MINUTES OF THE COUNCIL OF THE
METROPOLITAN SERVICE DISTRICT

MARCH 4, 1982

Members present:	Couns. Banzer, Deines, Etlinger, Kafoury, Kirkpatrick, Oleson, Rhodes and Williamson.
Members absent:	Couns. Berkman, Bonner, Burton and Schedeen.
Staff present:	Andy Jordan, Dan LaGrande, Kay Rich and Ethan Seltzer.
Visitors present:	Bob Weil, Metropolitan Citizens' League.

The meeting was called to order by Presiding Officer Banzer. There were no written or citizen communications to Council.

4. Councilor Communications.

Coun. Oleson introduced Resolution No. 82-316, Relating to the Development of a Solid Waste Transfer Station in Washington County, and asked that the resolution be referred to the Services Committee for consideration at their next meeting. He stated it is important for Metro to respond to the Washington County Solid Waste Advisory Committee promptly.

The resolution was referred to the Services Committee.

Presiding Officer Banzer noted the Metro employees art show, the works of which may be seen in the hallways of the building.

5.1 Ordinance No. 82-128, For the Purpose of Adopting and Implementing the Regional Stormwater Management Plan. (Second Reading)

Coun. Rhodes stated that there had been some amendments made in the ordinance; language changes making the plan voluntary rather than mandatory and an amendment proposed by Coun. Deines adding the provision in the Plan that program activities would take place subject to availability of financial resources.

A vote on the previous motion (Oleson/Rhodes) to adopt the ordinance carried unanimously.

5.2 Ordinance No. 82-129, Approving in Part the City of Portland's Petition for Locational Adjustment of Metro's Urban Growth Boundary (UGB) as Requested by Co-petitioners Kenneth and Melinda Scott and Amending the UGB as Approved. (Second Reading)

A vote on the previous motion (Bonner/Schedeen) to adopt the ordinance carried unanimously.

5.3 Ordinance No. 82-130, Adopting Contract Procedures and Establishing a Contract Review Board. (Second Reading)

Council considered a memo from Andy Jordan suggesting the following amendments: