ORDINANCE NO. 543-0

AN ORDINANCE ACCEPTING THE CITY'S PUBLIC FACILITIES PLAN AND AUTHORIZING ITS TRANSMITTAL TO THE STATE OF OREGON FOR REVIEW AND APPROVAL.

WHEREAS, cities in the State of Oregon are required, as part of their Periodic Review Process, to prepare "Public Facilities Plans" in accordance with State House Bill #2295 (1983) and OAR 6660-11-00 (October 1984); and

WHEREAS, the purpose of a Public Facilities Plan is to ensure that the requirements of the Oregon Department of Land and Conservation Division (DLCD) Goal 11 (water, storm, sanitary sewer and transportation facilities) are adequately addressed and implemented in urban areas; and

WHEREAS, the Troutdale Citizens Advisory Committee held public meetings and discussed the Public Facilities Draft Plan and recommended its approval to the Planning Commission; and

WHEREAS, the Troutdale Planning Commission held a public hearing on February 21, 1990, and recommended its adoption to the Troutdale City Council;

WHEREAS, the Troutdale City Council held a public hearing on March 13th, 1989; and

WHEREAS, it is in the best interest of the City of Troutdale to adopt the Draft Plan and forward it to the State of Oregon for review and concurrence accordingly.

NOW, THEREFORE, BE IT ORDAINED BY THE COMMON COUNCIL OF THE CITY OF TROUTDALE THAT:

1. The Public Facilities Plan be transmitted to the State of Oregon as required by statute for review and approval.

2. Staff continue to update this plan with historical, inventory and factual data.

3. Staff be allowed to modify the plan element sections with full hearing and concurrence of the Troutdale Planning Commission and City Council.

PASSED BY THE COMMON COUNCIL OF THE CITY OF TROUTDALE THIS 10TH DAY OF APRIL, 1990.

YEAS 6

NAYS 0

ABSTAINED 0

Sam K Cox

Sam K. Cox, Mayor

Date Signed April 11, 1990

ATTEST:

Valerie J. Raglione

Valerie J. Raglione
City Recorder

PW85:3

CITY OF TROUTDALE

DRAFT

PUBLIC FACILITIES PLAN

PROJECT STAFF

GREG WILDER, DIRECTOR OF PUBLIC WORKS
GERARDO ORTEGA, ENGINEERING TECHNICIAN
MARION BERG, DEPARTMENT SECRETARY

FEBRUARY 13, 1990

CITY COUNCIL 1990

SAM K. COX, MAYOR

MARJORIE SCHMUNK
PAUL THALHOFER
RON BURGIN

GENE BUI
SHARLYN JACOBS
HARRY FOWLER

PLANNING COMMISSION

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SUZANNE BARKER, DEVELOPMENT TECHNICIAN
KATHY CROWDER, CLERK

BRENT COLLIER, CHIEF OF POLICE

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SECTION 1

P O L I C I E S

PUBLIC FACILITIES PLAN

1.000 POLICY(S)

.100 GENERAL

.110 FINDINGS SUMMARY

The City of Troutdale experienced rapid growth in the mid through late 1970's. See chart "Population Analysis & Projections." Since that time, growth has been moderate averaging some 30 to 40 dwelling units a year. However, recent commercial and industrial activity has created demands for new facilities.

The City's pro-active posture towards development and expansion has required the construction and installation of the facilities and infrastructure necessary to provide service to all those properties west of the Sandy River within our jurisdictional boundaries. Recent annexation activity has resulted in an expanded land base not yet provided adequate services. Current development pressures on this recently annexed property call for a planned and systematic extension of service(s).

The City's existing infrastructure is relatively new and very little short term consideration is needed for replacement projects. The City has, however, replaced some of its existing facilities that were technically substandard. Additional wastewater treatment plant capacity and associated facilities will be required prior to 1994.

The ability of the City to provide adequate levels of water, sewer, drainage and transportation services to the community is a tool that encourages development. Inadequate services and planning serve the opposite. Troutdale, via its pro-active policies for development and expansion, provides a superior level of service in all its public facilities. Current wastewater treatment and drainage planning efforts will insure this posture both in the short and long term growth of the City.

TROUT LE

POPULATION CENSUS/PROJECTION

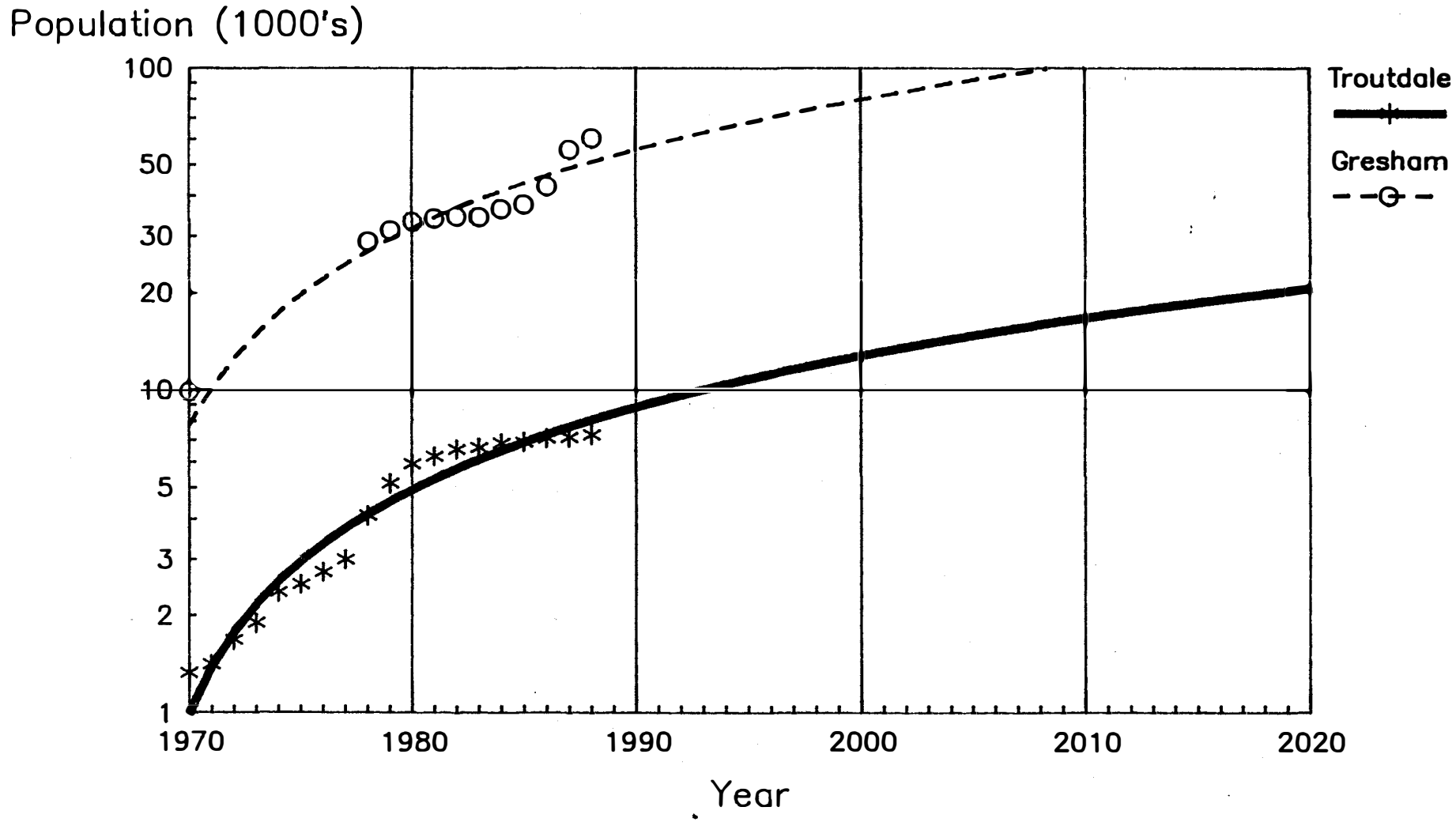
YEAR	U.S.	OREGON STATE	MULTNOMAH COUNTY	TROUTDALE	
1950*	151.3	1.521	.4715	514	
1956				504	
1957				504	
1958				500	
1959				515	
1960*	179.3	1.769	.5228	522	
1961				541	
1962				541	
1963				603	
1964				603	
1965				600	
1966				600	
1967				620	
1968				643	
1969				1300	
1970*	203.3	2.092	.5547	1325	(1661*)
1971				1410	
1972				1680	
1973				1900	
1974				2365	
1975	215.9			2500	
1976	218.0			2730	
1977	220.2			2990	
1978	222.6			3520	(3450 & 4100 Revisions)
1979	225.1			4575	(5150 Revised)
1980*	227.8			5990	(5908*)
1981	230.1	2.6562	.5634	6235	
1982	232.5	2.6515	.5643	6545	
1983	234.8	2.6312	.5579	6640	
1984	237.0	2.6493	.5600	6850	

YL	U.S. STATE	OREGON COUNTY	ULTNOMAH	TROUTDALE
1985	239.3	2.6758	.5622	6890
1986	241.6	2.7094	.5643	7095
1987	243.8	2.7481	.5668	7115
1988	246.1	2.7907	.5689	7255
1989	248.3	2.8372	.5706	7375
1990*	250.4	2.8839	.5724	
1991	252.5	2.9263	.5740	
1992	254.5	2.9685	.5755	
1993	256.5	3.0107	.5769	
1994	258.3	3.0526	.5782	
1995	260.1	3.0944	.5793	
1996	261.9	3.1362	.5804	
1997	263.5	3.1780	.5814	
1998	265.2	3.2200	.5824	
1999	266.7	3.2622	.5834	
2000	268.3	3.3045	.5845	
2001	269.8			
2002	271.3			
2003	272.7			
2004	274.2			
2005	275.6			
2006	277.0			
2007	278.4			
2008	279.8			
2009	281.2			
2010	282.6			
2011	283.9			
2012	285.2			
2013	286.5			
2014	287.8			
2015	289.0			
2016	290.2			
2017	291.3			
2018	292.4			
2019	293.4			
2020	294.4			

Troutdale & Gresham

Population History & Projections

City of Troutdale, Oregon



.120 POLICY STATEMENT

It is the policy of the City of Troutdale to provide advance construction of major public facilities including water, sewerage services, surface water drainage, and access. It is also the City's policy that the cost of providing these services shall be provided in the most cost effective manner and equitably distributed through the recipients of such services via system development charges, direct construction requirements of local benefit, easement and rights-of-way dedication, etc.

.130 IMPLEMENTATION STRATEGIES

.131 The City will be the primary planner and provider of facilities and services to the general population, homes, developments and businesses as follows:

A. Water supply, storage and distribution.

B. Sanitary sewer collection.

C. Transportation (roads, mass transit, bicycle paths).[1]

D. Drainage (both point and non-point sources of surface and ground water).[2]

.132 The City will monitor, coordinate and regulate, where appropriate, the following as they affect the residents, homes, developments and businesses in the community:

A. Utilities (electrical, telephone, natural gas, cable television, etc.).

B. Transportation facilities (mass transit, rail and air).[3]

C. Solid waste collection.

D. Other necessary public facilities located within the City.

.133 The City's Development Standards document will require that adequate facilities exist or can be provided as part of any development proposal prior

to issuing development permits. The "phased" issuance of permits pending the proposed construction or extension of facilities will be allowed. No final certificate of occupancy, however, will be issued until all required facilities and services have been constructed and placed in service.

.134 A development may be required to extend, modify, improve or otherwise construct additional facilities necessary to serve their needs. The City will actively work with an approved development proposal to expedite the construction of these facilities and will, as long as existing bonding capacity allows, work with potential developers and developments for funding mechanisms such as local improvement districts, capital monies set aside through the collection of system development charges, revenue bonds, general obligation bonds, etc.

Foot-notes

1) For local facilities and in cooperation and coordination with the State, Metro and County for regional facilities.

2) For local facilities and in cooperation and coordination with other affected jurisdiction, and the Sandy Drainage District.

3) For local facilities and in cooperation and coordination with Metro, the Port of Portland and heavy rail service providers.

.140 CAPITAL IMPROVEMENT PROGRAM

A. PURPOSE

The City shall develop, maintain, review and adhere to a Capital Improvement Program designed to:

- Protect the Health, Safety, and Welfare of its citizens, business owners, and properties.
- Further the policies of its Comprehensive Development Plan.
- Support the established levels of service and improve the service levels as is economically viable.

- Provide methods and procedures for the equitable distribution of costs in accordance with the benefits received.

B. CONTENTS

The City's Capital Improvement Plan shall include the following major elements:

- A Facilities Plan containing the master plan(s) for: water supply, storage and distribution; drainage systems and facilities; wastewater collection, treatment and sludge disposal; transportation facilities including road systems, mass transit, bike paths, hiking trails, etc.; park and greenway facilities; all other capital systems or facilities the City anticipates it will need by the year 2005. This plan shall also prescribe the timing of the construction for those elements set forth for the duration of the planning period.

- The Capital Investment Program shall describe the methods and procedures used to implement the Facilities Plan. These methods shall include any regulatory issues and requirements, organizational and financial techniques, etc. The Plan shall also include methods and procedures for a Periodic Review and update of the Plan and any of its components.

C. EXCEPTIONS

Public Facilities and Capital Investment plans and programs are designed to serve the will of the people, the policies of the Council and to encourage input and participation. There are, however, day to day exceptions and modifications required for the successful staff level administration of these plans and programs, and these exceptions will be allowed generally as follows:

- Administrative changes or modifications to a project which are minor in nature and do not significantly impact the integrity of the project or its general description, location, sizing, capacity or other general characteristics established.

- Technical or environmental modifications brought about by federal, state, county or city regulatory changes that have a direct impact on any proposed project.

D. REVIEW AND ACCEPTANCE

The City Administrator or designated officer shall review designs, approve plans, inspect construction and recommend the acceptance of public improvements to the City Council. The City Administrator may establish administrative guidelines, policies and procedures to protect the health, welfare and safety of its employees and citizens.

1.200 WATER SUPPLY AND DISTRIBUTION

.210 FINDINGS SUMMARY

The City of Troutdale supplies its own water from six drilled deep wells. A seventh well site has been located as a future source. Well #1 has been removed from service due to production problems and Well #6 is scheduled for completion mid-year, 1989. The City maintains emergency inter-connects with both the cities of Gresham and Wood Village for supply in either direction should the need so warrant. Four reservoirs provide storage for both domestic and fire flow needs, and a fifth reservoir site has been acquired to provide for enhanced fire flow protection in the northern industrial area of the City. The supply pipe network provides for development opportunities in all areas of the City except a recently annexed portion in the northwest industrial area.

The operational efficiency and service levels are extremely high and as growth takes place, the scale economy will result in lower constant dollar user fees or commodity rates with a continuing high level of service. The City, as a part of a larger fire district, maintains a Class III ISO rating. However, the ability to provide water for fire flow purposes scores 39.64 of 40.00 possible points in that grading system formula.

.220 POLICY STATEMENT

It is the policy of the City to provide public water service to all users within established City limits, as well as those users wishing services within our Urban Growth Boundary. It is also our policy, as budget allows, to provide for the advanced construction of facilities to encourage growth and development commensurate with the City's Comprehensive Development Plan.

.230 IMPLEMENTATION STRATEGY

The City will be the sole source provider of water service for its citizens within the corporate limits as well as those areas within our Urban Growth Boundary.

A. The City will not enter, join or become annexed by a water authority or district unless it can be demonstrated that such an act will improve the efficiency of commodity delivery, enhance the City's ability to provide fire protection, and reduce the commodity and service costs at optimum population and development.

B. The Development Standards Document will require adequate water supply, or an approved plan for service, prior to the issuance of development permits or final occupancy certifications.

C. The City will not issue any building or development permits when the need for domestic, industrial or fire flow water is greater than our ability to so provide.

D. The City will encourage development and annexation to make more efficient use of its "surplus" capacity system.

E. The decision to construct additional facilities will be based upon the City's Capital Improvement Program and/or current City Council goals. Privately financed projects, or those funded through local improvement districts, will be reviewed through an established process whether or not they are included in the Capital Improvement Program plan.

F. The City will continue to modernize its water supply, storage and distribution systems through current technology sampling, measuring and control system telemetry and computing facilities.

G. The City will comply with all local, state, and federal water quality/quantity standards. ISO standards for fire flow and associated facilities will be reviewed in a cost/benefit forum.

H. The City may allow or require the participation in a current or future local improvement district for required water services and facilities. This strategy may be implemented through the immediate formations of a district or by way of non-remonstration agreement(s).

1.300 SANITARY SEWAGE COLLECTION AND TREATMENT

.310 FINDINGS SUMMARY

The City provides wastewater collection and treatment services to all citizens, public facilities and businesses within its corporate boundaries. A single treatment plant together with six pump stations and the necessary collection system pipe network provide an excellent level of service. The City consistently meets or betters the discharge limitations set forth by our DEQ operating permit for plant inflow from all currently connected facilities. An adequate capacity for future users holding system reserves is maintained.

Current growth rates suggest a major treatment plant expansion project within the next three to five years. Phase I preliminary design and engineering is currently underway and Phase II engineering is scheduled for Fiscal Year 1989-90.

An on-going program of modernization and upgrade for the treatment facility, extension sewage pump stations and collection system addresses the short term growth and expansion system requirements.

.320 POLICY STATEMENT

It is the policy of the City of Troutdale to be the sole source provider of wastewater collection and treatment services both within its corporate limits and within those areas contained by the Urban Growth Boundary and the Regional "208" Collection and Treatment Plan.

.330 IMPLEMENTATION AND STRATEGY

A. The City's Development Standards will require that adequate collection and treatment system capacity is available, or an approved plan is filed to make it so, prior to the issuance of development plans, building permits or certificates of occupancy.

B. The City will not issue any building or development permit(s) when the need for service is greater than our ability to provide.

C. The decision to construct additional collection facilities or plant expansion will be based upon the City's Capital Improvement Program and/or current City Council goals. Privately funded projects or those funded through local improvement districts will be reviewed through an established process whether or not they are included in the Capital Improvement Program plan.

D. The City may, as long as adequate capacity exists, consider providing services to areas within or immediately adjacent to serviceable drainage basins outside of our existing corporate limits and Urban Growth Boundary, inside the Metro UGB (with Boundary Commission concurrence.

E. The City will continue in its efforts to reduce inflow and infiltration as long as such reductions provide a cost benefit competitiveness with treatment plant and collection system expansion costs and/or to meet all local, state and federal requirements.

F. The City will prepare a treatment and collection system master plan prior to its Capital Improvement Program waste water collection and treatment element update.

G. The City may allow or require the participation in a current or future local improvement district for required sewer services and facilities. This strategy may be implemented through immediate formations of a district or by way of non-remonstration agreement(s).

1.400 DRAINAGE COLLECTION AND DISPOSAL

.410 FINDINGS SUMMARY

The reduction of natural areas with vegetation has diminished the natural ability of the land to retain surface water. The development of property creates impervious surfaces and results in a continuing increase in storm water runoff.

Increased runoff has been met with advanced construction and planning of storm water collection and outfall systems in most of the residential areas of the community. However, those properties in the industrial northern and northwestern

sections require additional infrastructure. A storm drainage interim guideline document has been prepared to address those needs until such time as a storm drain master plan has been prepared and implemented (see exhibit).

The Arata Creek drainage basin requires extensive study and the Beaver Creek drainage requires vigilance due to increasing levels of flows, not only from development with the City's corporate limits but also as a result of development within the corporate limits of Gresham.

Specialized drainage management practices may be required to mitigate against potential surface water pollution and/or to meet any future DEQ or EPA rules and regulations.

.420 POLICY STATEMENT

It is the City's policy to establish a comprehensive drainage management system which controls both the quantity and quality of surface water runoff, protect properties from surface water related damage and control pollution in receiving waterways. It is also the City's policy to cooperatively provide storm water collection and discharge systems to all properties within the corporate limits and to all properties within our Urban Growth Boundary (planning area boundary).

.430 IMPLEMENTATION STRATEGY

A. The City's Development Standards will require development methods and standards compatible with those established in a Drainage Master Plan.

B. The City shall cooperate with the cities of Gresham and Wood Village, Multnomah County, and with Sandy Drainage District in establishing regional drainage plans for the Beaver Creek, Arata Creek, and other undefined basins.

C. The City will prepare a Drainage Master Plan during the 1989-90 fiscal year, and the Capital Improvement Program will reflect the requirements of that plan.

D. The City's development standards will require future developments to submit site drainage plans that: provide for both existing and projected flows to, on and from the site; provide downstream improvements to address additional off-site flows; emphasizethe use of natural drainageways; investigate the feasibility of retention or detention facilities on the site; minimize the use of impervious surfaces; provide methods to control runoff rates; provide drainage easements; and address other drainage issues and requirements set forth in any approved interim drainage guidelines and/or those to be contained in the forthcoming Drainage Master Plan.

E. The City will review the option of a drainage utility with associated user and/or development fees to provide operational and capital sources for its storm water collection and outfall systems. A specific finance and funding plan will be prepared prior to the creation of such a utility.

F. The Development Standards will prohibit the alteration of natural drainageways except where engineering evidence establishes the need. Basic drainageway alignments will be preserved unless compelling engineering evidence, or the Drainage Master Plan, suggests a better public good as a result of changes in alignment or configuration.

G. The City shall continue its street sweeping policy and shall review that policy from time to time to ensure the reduction of debris into the storm water system.

H. The Development Standards document will require that all impervious areas used for parking, service, maintenance or storage of vehicles and equipment be provided with effective oil/water separators, or additional treatment if warranted, prior to the discharge into the storm water collection system or natural waterways. A maintenance and/or treatment standard operating procedure for these facilities will be submitted to the City and DEQ for approval prior to the issuance of any occupancy certifications.

I. The City shall establish rules and regulations, together with attendant fines and fees for the violation of any local, state or federal storm water quality or quantity discharge.

J. The Community Development Plan map will depict land use designations such as park land, greenways, open space, et cetera, which shall be preserved to minimize flows in flood planes and to mitigate against potential damage to structures.

K. The Development Standards document shall establish erosion control standards to minimize runoff from construction sites where the natural protective cover and vegetation have been removed.

L. The City may allow or require the participation in a current or future local improvement district for required storm drainage services and facilities. This strategy may be implemented through immediate formations of a district or by way of non-remonstration agreement(s).

1.500 TRANSPORTATION

.510 FINDINGS SUMMARY

Over the past twenty-five years, the City has grown from a few hundred people to a city of greater than 7,200. This rate of growth has also affected other cities in East Multnomah County. The need to provide an adequate local and regional transportation system was identified early and mechanisms were established through which the affected jurisdictions could work to see that the regional and local needs for transportation facilities were addressed.

The City of Troutdale maintains jurisdictional control over its local road system network. The arterial and some of the collector system is controlled by Multnomah County and the City is bisected by Interstate 84 and the Historic Columbia River Highway (a state facility).

Transportation system improvements have generally kept pace with the City's local needs and adequate new construction has provided for future growth as well. However, the impact on the arterial system within the City as a result of regional growth must be mitigated by a continuing involvement, planning and construction process.

Troutdale is the only East Multnomah County city with a general aviation airport. In addition, the main Northern Pacific Railroad line passes through the City in close proximity to both the interstate freeway and the airport, enhancing development opportunities in the City's northern industrial area.

A. TRAFFICWAYS

The City of Troutdale contains facilities functionally classified as cul-de-sac, local, neighborhood collector, minor and major arterials and the interstate system.

These road systems not only meet the local ingress/egress and service requirements, but also serve the broader regional need as well. The surface and structural condition of these facilities is generally very good with only a few needing extensive work. The jurisdiction controlling the individual facility is generally responsible for that facility's maintenance and upkeep. The City contracts with Multnomah County for its road maintenance except for minor or emergency repairs, all street sweeping, and catch basin/dry well maintenance.

B. PUBLIC TRANSIT

Bus service is provided to Troutdale along two primary routes by Tri-Met. Troutdale is an "end of the line" city and service is generally adequate for its needs.

The Tri-Met service provides for direct access to Portland and Gresham and connecting accesses to other cities within the Metropolitan area.

C. HEAVY RAIL

Union Pacific provides for heavy rail access to Troutdale. Their main east/west line bisects the City just north of the Central Business District and provides, together with Interstate 84, a separation of our residential community from the freeway oriented commercial and industrial areas in the north half of the City. This heavy rail system contains spurs to serve local industry and access is available for additional spur connections.

D. AIR

Portland/Troutdale general aviation airport is in the north industrial area of the City. This airport serves as a general aviation satellite to the Portland International Airport approximately twelve miles to the west of the City. This airport provides a seed for air related industrial development surrounding it. Private aviation access is provided for both local fixed based operators as well as for privately owned aircraft with tie-downs, hangers and services.

An Airport Master Plan is under preparation and is expected to be completed by mid Fiscal Year 1989-90. The Port of Portland maintains ownership and operational control and works cooperatively with the City on its planning and development programs.

E. BIKEWAYS

The State of Oregon requires that 1% of its gas tax revenue paid to the City be set aside and used for the construction and maintenance of bikeways and hiking trails. The City works, in a Regional forum, to ensure that adequate provisions are made for biking facilities. Our plans also include facilities incorporated into the Regional 40-Mile Bike Loop.

.520 POLICY STATEMENT

It is the policy of the City of Troutdale to provide for cul-de-sac, local, collector and arterial road systems and public transportation facilities. The City's policy is also to provide

active planning involvement for public transportation, heavy rail and general aviation facilities.

A. TRAFFICWAYS

The policies of the City of Troutdale are to: provide for and maintain all road facilities necessary for community access and safety; work actively with Multnomah County for the provision of some collector and all arterial road systems within or serving the community; work actively with the State of Oregon Department of Transportation to ensure that planning, construction and maintenance of state facilities, within the City, meet City, state, and regional goals; to support inter-jurisdictional coordination on roads planning and maintenance issues.

B. PUBLIC TRANSIT

It is the policy of the City of Troutdale to work through all established Regional forums for the planning, maintenance and fee structure associated with providing public transit to the City and within the Region.

C. HEAVY RAIL

It is the policy of the City of Troutdale to work with Union Pacific and private owners of heavy rail spur lines to ensure that adequate planning, safety and service is provided to and for the City, its citizens and industrial rail users.

D. AIR

It is the policy of the City of Troutdale to work with the Port of Portland, the Federal Aviation Administration, and other planning bodies to ensure that adequate planning, operation and service is provided to the Portland/Troutdale Airport.

E. BIKEWAYS

It is the policy of the City of Troutdale to expend appropriately designated road tax funds on bikeways, trails and other qualifiable facilities. It is also the policy of the City to work in concert with County and regional

planners to ensure compliance with a regional bike plan and access program.

.530 IMPLEMENTATION STRATEGY

The City's Development Standards document shall contain provisions and standards for all applicable transportation facilities.

The City shall maintain active involvement with all established regional forums to ensure that the transportation needs of the City and Region are met.

The City shall actively work with individual jurisdictions to overcome transportation problems or to solve inter-jurisdictional transportation need disputes.

A. TRAFFICWAYS

1. The City's Development Standards document shall contain designs standards for all functional classifications of roadways within the City.

2. The City shall participate with the East Multnomah County Transportation Committee, the Transportation Policy Advisory Committee, the Joint Policy Advisory Committee, Metro and all others involved in the planning, design and operation of roadways within the City and the Region.

3. The City's Development Standards document shall require future developments to submit road systems plans and designs that meet the applicable provisions of the Standards document. Plans will be required that provide provisions for connection to existing systems and/or future roadway extensions.

4. The City will encourage planned unit developments to provide for a higher utilization and greater cost effectiveness of its road system(s).

5. The City will continue an annual review of its road maintenance contract with Multnomah County to ensure that this procedure provides the most cost

effective and beneficial maintenance arrangement, and to ensure that levels of service are commensurate with City standards and Council goals.

6. The City will actively work with the State of Oregon Department of Transportation to ensure that State facilities within the City's jurisdiction are constructed, maintained and operated in accordance with City plans and standards.

7. The City's Development Standards document will require that development containing road systems and parking lots interface and integrate into the City's drainage standards and master plan.

8. The City shall maintain light duty responsibility for emergency road repair, all street sweeping, snow removal, sanding, and catch basin/drywell maintenance on City streets. Some sanding and snow removal may be provided on county/state facilities to meet local service levels.

9. The City will work with Multnomah County and the State of Oregon to ensure that snow removal and sanding operations on their facilities comply with City standards.

10. The City will work with Multnomah County, the cities of Wood Village, Fairview and Gresham to achieve a County owned sub-regional arterial road system network and may execute memoranda of understanding and intergovernmental agreements accordingly.

B. PUBLIC TRANSIT

1. The City's Development Standards shall require, where applicable, that provisions be made for public transit facilities such as bus turnouts and shelters.

2. The City shall coordinate and participate in all Regional forums dealing with the planning, operation and maintenance of

public transit as it affects Troutdale and the Region.

3. The City shall work with Tri-Met to ensure uninterrupted operation during periods of construction or adverse weather conditions.

4. The City supports the general concept of a light-rail loop for service to the Community College, Troutdale and other jurisdictions in East Multnomah County, and encourages a continuing dialog to that future end.

C. HEAVY RAIL

1. The City's Development Standards document shall establish light-rail connecting points or zones and potential spur line locations for all industrial development requiring that service. Provisions shall be made in the Standards document for easements or rights-of-way for the extension of rail service in order to provide availability to future development.

2. The City shall work with the Union Pacific Railway Company and spur owners to ensure adequate levels of service and accessibility to the heavy rail system to accommodate development pressures and development potential.

3. The City shall work with the Union Pacific Railway to ensure that all rail crossings are grade separated or protected to current standards when at grade.

4. The City shall work with the Union Pacific Railway to ensure the protection of public facilities and utilities crossing or making use of railway right-of-way.

D. AIR

1. The City of Troutdale shall work with the Port of Portland and the Federal Aviation Administration on all planning, facilities, or service oriented projects at the Portland/Troutdale Airport.

2. The City shall work with the Federal Aviation Administration and the Port of Portland to ensure that the Portland/Troutdale Airport tower is kept operational.

3. The City of Troutdale shall work with the Port of Portland and the Federal Aviation Administration on all plans relating to the changes of levels of service, land use patterns, site development standards, public utility and facility requirements, etc.

4. The City of Troutdale shall work with the Port of Portland to ensure that the clear zone areas are effectively utilized for waste water sludge disposal, or for other purposes beneficial to the City and Port within the use restrictions that those clear zone areas impose.

E. BIKEWAYS

1. The City of Troutdale's Development Standards document shall include provisions requiring developments to construct the necessary bikeways or foot paths required to meet the planning goals of the community and the region for these facilities.

2. The City shall remain actively involved in all regional forums dealing with regional bicycle and pedestrian circulation plans, procedures and funding resources.

3. The City of Troutdale shall establish, through its Capital Improvement Program, a definitive community wide bicycle route with appropriate bicycle and pedestrian facilities.

#4

SECTION 2

INVENTORY AND EVALUATION

2.000 INVENTORY AND EVALUATION

2.100 GENERAL

The City of Troutdale has grown from a small community of just over 500 in 1960 to a city of over 7200 in 1989. The City has properly anticipated its Public Facilities needs during this period of rapid growth and has met those needs and requirements with modern facilities and services.

There are no expansion requirements necessary to service our existing population, commercial, industrial or community service base. There are no expansion requirements necessary to meet any committed reserves.

2.200 WATER SUPPLY AND DISTRIBUTION

.210 GENERAL

The City's water system is divided into five pressure zones and depicted on the map "Water Distribution System". This system is generally composed of five deep wells, approximately forty-five miles of distribution lines, and four reservoirs. There are two emergency interconnects with the City of Wood Village, and one with the City of Gresham. The table "Flow Rate & Storage Analysis" marks key points in production, supply, and storage limits..... the City's on line production capacity will serve our maximum daily demand for a population equivalent of approximately 15,000 and a storage requirement for a population equivalent of about 16,000.

A capacity analysis was completed for the system in 1988 and a system model was installed in the City's computing facilities to monitor system needs, growth and specific development requirements. The table "Dynamic (Normal Load Demand) Analysis" sets forth flow and pressure conditions under "normal" (non-fire flow) demand.

A fifth reservoir site was identified in pressure zone three and the property secured for it. A sixth well is scheduled for installation during the 1989-90 fiscal year.

A complete water distribution system inventory and

FLOW RATE & RAGE ANALYSIS

CITY OF TROUTDALE

07-Mar-89

POPULATION	FIRE FLOW (GPM)	AVG DAILY DEMAND(GPM)	MAX DAILY DEMAND(GPM)	FIRE FLOW PLUS AVG DAILY	FIRE FLOW PLUS MAX DAILY(GPM)	FIRE STORAGE REQUIRED	RESERVE STORAGE MIN	RESERVE STORAGE MAX	PEAKING STORAGE MIN	PEAKING STORAGE MAX	FIRE STORAGE +RESERVE+PEAKING MIN	FIRE STORAGE +RESERVE+PEAKING MAX	3 DAY STORAGE
1,000	1,015	87	226	1,102	1,241	0.6089	0.08	0.16	0.08	0.16	0.77	0.93	0.38
1,250	1,134	109	282	1,243	1,416	0.6804	0.10	0.20	0.10	0.20	0.88	1.09	0.47
1,500	1,242	130	339	1,372	1,580	0.7449	0.12	0.24	0.12	0.24	0.99	1.23	0.56
2,000	1,432	174	451	1,606	1,884	0.8594	0.16	0.33	0.16	0.33	1.18	1.51	0.75
2,250	1,518	195	508	1,714	2,026	0.9111	0.18	0.37	0.18	0.37	1.28	1.64	0.84
2,500	1,600	217	564	1,817	2,164	0.9600	0.20	0.41	0.20	0.41	1.37	1.77	0.94
2,750	1,677	239	621	1,916	2,298	1.0064	0.22	0.45	0.22	0.45	1.45	1.90	1.03
3,000	1,751	260	677	2,012	2,428	1.0508	0.24	0.49	0.24	0.49	1.54	2.03	1.13
3,250	1,822	282	734	2,104	2,556	1.0933	0.26	0.53	0.26	0.53	1.62	2.15	1.22
3,500	1,890	304	790	2,194	2,680	1.1342	0.28	0.57	0.28	0.57	1.70	2.27	1.31
3,750	1,956	326	846	2,282	2,802	1.1736	0.30	0.61	0.30	0.61	1.78	2.39	1.41
4,000	2,019	347	903	2,367	2,922	1.2117	0.33	0.65	0.33	0.65	1.86	2.51	1.50
4,250	2,081	369	959	2,450	3,040	1.2486	0.35	0.69	0.35	0.69	1.94	2.63	1.59
4,500	2,141	391	1,016	2,531	3,156	1.2844	0.37	0.73	0.37	0.73	2.02	2.75	1.69
4,750	2,199	412	1,072	2,611	3,271	1.3192	0.39	0.77	0.39	0.77	2.09	2.86	1.78
5,000	2,255	434	1,128	2,689	3,384	1.3531	0.41	0.81	0.41	0.81	2.17	2.98	1.88
5,250	2,310	456	1,185	2,766	3,495	1.3861	0.43	0.85	0.43	0.85	2.24	3.09	1.97
5,500	2,364	477	1,241	2,841	3,605	1.4183	0.45	0.89	0.45	0.89	2.31	3.21	2.06
5,750	2,416	499	1,298	2,916	3,714	1.4498	0.47	0.93	0.47	0.93	2.38	3.32	2.16
6,000	2,468	521	1,354	2,989	3,822	1.4806	0.49	0.98	0.49	0.98	2.46	3.43	2.25
6,250	2,518	543	1,411	3,060	3,929	1.5108	0.51	1.02	0.51	1.02	2.53	3.54	2.34
6,500	2,567	564	1,467	3,131	4,034	1.5403	0.53	1.06	0.53	1.06	2.60	3.65	2.44
6,750	2,615	586	1,523	3,201	4,139	1.5692	0.55	1.10	0.55	1.10	2.67	3.76	2.53
7,000	2,663	608	1,580	3,270	4,243	1.5976	0.57	1.14	0.57	1.14	2.74	3.87	2.63
7,250	2,709	629	1,636	3,339	4,345	1.6255	0.59	1.18	0.59	1.18	2.80	3.98	2.72
7,500	2,755	651	1,693	3,406	4,448	1.6529	0.61	1.22	0.61	1.22	2.87	4.09	2.81
7,750	2,800	673	1,749	3,472	4,549	1.6799	0.63	1.26	0.63	1.26	2.94	4.20	2.91
8,000	2,844	694	1,806	3,538	4,649	1.7063	0.65	1.30	0.65	1.30	3.01	4.31	3.00
8,250	2,887	716	1,862	3,603	4,749	1.7324	0.67	1.34	0.67	1.34	3.07	4.41	3.09
8,500	2,930	738	1,918	3,668	4,849	1.7581	0.69	1.38	0.69	1.38	3.14	4.52	3.19
8,750	2,972	760	1,975	3,732	4,947	1.7833	0.71	1.42	0.71	1.42	3.21	4.63	3.28
9,000	3,014	781	2,031	3,795	5,045	1.8083	0.73	1.46	0.73	1.46	3.27	4.73	3.38
9,250	3,055	803	2,088	3,858	5,142	1.8328	0.75	1.50	0.75	1.50	3.34	4.84	3.47
9,500	3,095	825	2,144	3,920	5,239	1.8570	0.77	1.54	0.77	1.54	3.40	4.94	3.56
9,750	3,135	846	2,201	3,981	5,335	1.8809	0.79	1.58	0.79	1.58	3.47	5.05	3.66
10,000	3,174	868	2,257	4,042	5,431	1.9045	0.81	1.63	0.81	1.63	3.53	5.15	3.75
10,250	3,213	890	2,313	4,103	5,526	1.9277	0.83	1.67	0.83	1.67	3.59	5.26	3.84
10,500	3,251	911	2,370	4,163	5,621	1.9507	0.85	1.71	0.85	1.71	3.66	5.36	3.94
10,750	3,289	933	2,426	4,222	5,715	1.9734	0.87	1.75	0.87	1.75	3.72	5.47	4.03
11,000	3,326	955	2,483	4,281	5,809	1.9958	0.89	1.79	0.89	1.79	3.78	5.57	4.13
11,250	3,363	977	2,539	4,340	5,902	2.0180	0.91	1.83	0.91	1.83	3.85	5.67	4.22
11,500	3,400	998	2,595	4,398	5,995	2.0399	0.93	1.87	0.93	1.87	3.91	5.78	4.31
11,750	3,436	1,020	2,652	4,456	6,088	2.0616	0.95	1.91	0.95	1.91	3.97	5.88	4.41
12,000	3,472	1,042	2,708	4,513	6,180	2.0830	0.98	1.95	0.98	1.95	4.03	5.98	4.50
12,250	3,507	1,063	2,765	4,570	6,272	2.1042	1.00	1.99	1.00	1.99	4.09	6.09	4.59
12,500	3,542	1,085	2,821	4,627	6,363	2.1252	1.02	2.03	1.02	2.03	4.16	6.19	4.69
12,750	3,577	1,107	2,878	4,683	6,454	2.1459	1.04	2.07	1.04	2.07	4.22	6.29	4.78
13,000	3,611	1,128	2,934	4,739	6,545	2.1665	1.06	2.11	1.06	2.11	4.28	6.39	4.88
13,250	3,645	1,150	2,990	4,795	6,635	2.1868	1.08	2.15	1.08	2.15	4.34	6.49	4.97
13,500	3,678	1,172	3,047	4,850	6,725	2.2069	1.10	2.19	1.10	2.19	4.40	6.59	5.06

POPULATION	FIRE FLOW (GPM)	AVG DAILY DEMAND(GPM)	MAX DAILY DEMAND(GPM)	FIRE FLOW PLUS AVG DAILY	FIRE FLOW PLUS MAX DAILY(GPM)	FIRE STORAGE REQUIRED	RESERVE STORAGE MIN	RESERVE STORAGE MAX	PEAKING STORAGE MIN	PEAKING STORAGE MAX	FIRE STORAGE +RESERVE+PEAKING MIN	FIRE STORAGE +RESERVE+PEAKING MAX	3 DAY STORAGE
13,750	3,711	1,194	3,103	4,905	6,815	2.2269	1.12	2.23	1.12	2.23	4.46	6.70	5.16
14,000	3,744	1,215	3,160	4,960	6,904	2.2466	1.14	2.28	1.14	2.28	4.52	6.80	5.25
14,250	3,777	1,237	3,216	5,014	6,993	2.2662	1.16	2.32	1.16	2.32	4.58	6.90	5.34
14,500	3,809	1,259	3,273	5,068	7,082	2.2856	1.18	2.36	1.18	2.36	4.64	7.00	5.44
14,750	3,841	1,280	3,329	5,122	7,170	2.3049	1.20	2.40	1.20	2.40	4.70	7.10	5.53
15,000	3,873	1,302	3,385	5,175	7,259	2.3239	1.22	2.44	1.22	2.44	4.76	7.20	5.63
15,250	3,905	1,324	3,442	5,228	7,347	2.3428	1.24	2.48	1.24	2.48	4.82	7.30	5.72
15,500	3,936	1,345	3,498	5,281	7,434	2.3615	1.26	2.52	1.26	2.52	4.88	7.40	5.81
15,750	3,967	1,367	3,555	5,334	7,522	2.3801	1.28	2.56	1.28	2.56	4.94	7.50	5.91
16,000	3,998	1,389	3,611	5,386	7,609	2.3985	1.30	2.60	1.30	2.60	5.00	7.60	6.00
16,250	4,028	1,411	3,668	5,439	7,696	2.4168	1.32	2.64	1.32	2.64	5.06	7.70	6.09
16,500	4,058	1,432	3,724	5,491	7,782	2.4349	1.34	2.68	1.34	2.68	5.12	7.80	6.19
16,750	4,088	1,454	3,780	5,542	7,869	2.4529	1.36	2.72	1.36	2.72	5.17	7.90	6.28
17,000	4,118	1,476	3,837	5,594	7,955	2.4708	1.38	2.76	1.38	2.76	5.23	8.00	6.38
17,250	4,147	1,497	3,893	5,645	8,041	2.4885	1.40	2.80	1.40	2.80	5.29	8.09	6.47
17,500	4,177	1,519	3,950	5,696	8,126	2.5061	1.42	2.84	1.42	2.84	5.35	8.19	6.56
17,750	4,206	1,541	4,006	5,747	8,212	2.5235	1.44	2.88	1.44	2.88	5.41	8.29	6.66
18,000	4,235	1,563	4,063	5,797	8,297	2.5408	1.46	2.93	1.46	2.93	5.47	8.39	6.75
18,250	4,263	1,584	4,119	5,848	8,382	2.5580	1.48	2.97	1.48	2.97	5.52	8.49	6.84
18,500	4,292	1,606	4,175	5,898	8,467	2.5751	1.50	3.01	1.50	3.01	5.58	8.59	6.94
18,750	4,320	1,628	4,232	5,948	8,552	2.5920	1.52	3.05	1.52	3.05	5.64	8.69	7.03
19,000	4,348	1,649	4,288	5,997	8,636	2.6089	1.54	3.09	1.54	3.09	5.70	8.78	7.13
19,250	4,376	1,671	4,345	6,047	8,721	2.6256	1.56	3.13	1.56	3.13	5.75	8.88	7.22
19,500	4,404	1,693	4,401	6,096	8,805	2.6422	1.58	3.17	1.58	3.17	5.81	8.98	7.31
19,750	4,431	1,714	4,457	6,146	8,889	2.6587	1.60	3.21	1.60	3.21	5.87	9.08	7.41
20,000	4,458	1,736	4,514	6,195	8,972	2.6750	1.63	3.25	1.63	3.25	5.93	9.18	7.50
20,250	4,486	1,758	4,570	6,243	9,056	2.6913	1.65	3.29	1.65	3.29	5.98	9.27	7.59
20,500	4,512	1,780	4,627	6,292	9,139	2.7075	1.67	3.33	1.67	3.33	6.04	9.37	7.69
20,750	4,539	1,801	4,683	6,340	9,222	2.7236	1.69	3.37	1.69	3.37	6.10	9.47	7.78
21,000	4,566	1,823	4,740	6,389	9,305	2.7395	1.71	3.41	1.71	3.41	6.15	9.56	7.88
21,250	4,592	1,845	4,796	6,437	9,388	2.7554	1.73	3.45	1.73	3.45	6.21	9.66	7.97
21,500	4,619	1,866	4,852	6,485	9,471	2.7712	1.75	3.49	1.75	3.49	6.26	9.76	8.06
21,750	4,645	1,888	4,909	6,533	9,554	2.7868	1.77	3.53	1.77	3.53	6.32	9.86	8.16
22,000	4,671	1,910	4,965	6,580	9,636	2.8024	1.79	3.57	1.79	3.57	6.38	9.95	8.25
22,250	4,696	1,931	5,022	6,628	9,718	2.8179	1.81	3.62	1.81	3.62	6.43	10.05	8.34
22,500	4,722	1,953	5,078	6,675	9,800	2.8333	1.83	3.66	1.83	3.66	6.49	10.15	8.44
22,750	4,748	1,975	5,135	6,722	9,882	2.8486	1.85	3.70	1.85	3.70	6.55	10.24	8.53
23,000	4,773	1,997	5,191	6,770	9,964	2.8638	1.87	3.74	1.87	3.74	6.60	10.34	8.63
23,250	4,798	2,018	5,247	6,816	10,046	2.8789	1.89	3.78	1.89	3.78	6.66	10.44	8.72
23,500	4,823	2,040	5,304	6,863	10,127	2.8940	1.91	3.82	1.91	3.82	6.71	10.53	8.81
23,750	4,848	2,062	5,360	6,910	10,208	2.9089	1.93	3.86	1.93	3.86	6.77	10.63	8.91
24,000	4,873	2,083	5,417	6,956	10,290	2.9238	1.95	3.90	1.95	3.90	6.82	10.72	9.00
24,250	4,898	2,105	5,473	7,003	10,371	2.9386	1.97	3.94	1.97	3.94	6.88	10.82	9.09
24,500	4,923	2,127	5,530	7,049	10,452	2.9533	1.99	3.98	1.99	3.98	6.93	10.92	9.19
24,750	4,947	2,148	5,586	7,095	10,533	2.9680	2.01	4.02	2.01	4.02	6.99	11.01	9.28
25,000	4,971	2,170	5,642	7,141	10,613	2.9825	2.03	4.06	2.03	4.06	7.05	11.11	9.38

•	FEET	US GPM	FEET	PSI
100	38.00	.00	199.98	70.12
101	23.00	.00	199.97	76.61
102	24.00	.00	199.97	76.18
103	30.00	.00	199.97	73.58
104	29.00	.00	199.97	74.01
105	31.00	9.00	199.97	73.15
106	71.00	2.00	199.97	55.83
107	31.00	.00	199.97	73.15
108	36.00	37.00	199.96	70.98
109	36.00	9.00	199.97	70.98
110	40.00	-9.00	199.98	69.25
111	39.00	.00	199.98	69.69
112	38.00	.00	199.98	70.12
113	84.00	2.00	200.00	50.22
200	42.00	.00	259.71	94.25
201	39.00	9.00	259.71	95.55
202	54.00	19.00	259.71	89.05
203	77.00	11.00	259.72	79.10
204	154.00	19.00	259.70	45.76
205	80.00	2.00	259.73	77.81
206	84.00	3.00	259.75	76.07
207	76.00	13.00	259.63	79.50
208	71.00	2.00	259.63	81.66
209	100.00	13.00	259.62	69.10
210	150.00	13.00	259.62	47.45
211	129.00	.00	259.84	56.64
212	360.00	-172.00	260.00	.00
214	103.00	.00	259.62	67.80

Maximum unbalanced head in any loop .0000 In loop # 4

DYNAMIC (NORMAL LOAD DEMAND) ANALYSIS

Zones I & II

Node	Elevation FEET	Demand US GPM	HGL FEET	Pressure PSI
215	103.00	.00	300.00	85.28
216	106.00	5.00	300.00	83.98
217	123.00	3.00	300.00	76.62
218	160.00	28.00	300.00	60.60
219	230.00	.00	300.00	30.30
300	154.00	19.00	386.34	100.58
301	236.00	28.00	386.36	65.09
302	262.00	8.00	386.46	53.88
303	290.00	10.00	386.72	41.87
304	278.00	18.00	386.75	47.08
305	309.00	2.00	387.11	33.81
306	328.00	1.00	387.20	25.63
307	333.00	.00	387.25	23.48
308	388.00	-180.84	387.31	-.30
309	298.00	23.00	386.71	38.40
310	266.00	13.00	386.48	52.16
311	172.00	6.00	386.48	92.85
312	212.00	10.00	386.57	75.57
314	205.00	8.00	386.64	78.63
315	204.00	3.00	386.73	79.10
316	217.00	12.00	387.23	78.69
317	290.00	.00	390.05	48.31
318	225.00	2.00	386.91	70.09
319	217.00	28.00	386.85	73.53
320	181.00	29.00	386.72	89.06
321	178.00	7.00	386.67	90.33
322	184.00	30.00	386.72	87.76
323	226.00	7.00	386.91	69.56
324	232.00	.00	386.92	67.07
325	242.00	7.00	386.94	62.74
326	235.00	9.00	386.97	65.79
327	238.00	2.00	387.11	64.55
328	277.00	5.00	387.11	47.67
329	270.00	13.00	386.98	50.64
330	234.00	21.00	386.94	66.21
331	263.00	.00	386.94	53.65
332	388.00	-92.65	387.31	-.30
333	193.00	27.00	386.79	83.99
334	176.00	6.00	386.67	91.20
335	171.00	7.00	386.67	93.36
336	172.00	.00	386.67	92.93
337	183.00	60.00	386.67	88.17
338	224.00	12.00	386.91	70.52
339	230.00	8.00	386.92	67.93
340	235.00	7.00	386.93	65.77
341	238.00	14.00	386.91	64.46
342	244.00	17.00	386.92	61.87
343	263.00	13.00	386.94	53.65
344	230.00	8.00	387.14	66.03
345	207.00	7.00	386.62	75.76
346	240.00	10.00	386.63	62.88
347	179.00	18.00	386.54	89.54
348	174.00	5.00	386.50	91.99
349	173.00	22.00	386.49	92.42

DYNAMIC (NORMAL LOAD DEMAND) ANALYSIS

Zones III, IV & V

Node	Elevation FEET	Demand US GPM	HGL FEET	Pressure PSI
350	182.00	.00	386.49	88.52
351	176.00	14.00	386.48	91.12
352	170.00	4.00	386.48	93.71
353	173.00	.00	386.48	92.41
354	242.00	10.00	386.49	62.55
355	215.00	3.00	386.53	74.26
356	297.00	14.00	386.77	38.86
357	286.00	.00	386.77	43.62
358	318.00	2.00	387.18	29.95
359	255.00	.00	387.17	57.22
360	302.00	2.00	386.78	36.70
361	290.00	4.00	386.71	41.87
362	289.00	12.00	386.55	42.23
363	295.00	9.00	386.71	39.70
364	304.00	.00	386.71	35.81
365	296.00	9.00	386.71	39.27
366	286.00	.00	386.71	43.60
367	279.00	9.00	386.54	46.55
368	300.00	.00	386.54	37.46
369	256.00	10.00	386.48	56.48
370	236.00	7.00	386.48	65.14
371	190.00	9.00	386.48	85.05
372	205.00	15.00	386.48	78.56
373	176.00	.00	386.49	91.12
374	176.00	15.00	386.50	91.13
375	199.00	18.00	386.50	81.17
376	178.00	8.00	386.58	90.29
377	179.00	6.00	386.59	89.86
378	190.00	11.00	386.61	85.11
380	227.00	4.00	386.63	69.10
381	230.00	16.00	387.06	67.99
382	262.00	24.00	386.97	53.67
383	274.00	17.00	387.08	48.93
384	220.00	.00	387.12	72.24
400	298.00	4.00	442.61	63.03
401	310.00	.00	442.64	57.85
402	324.00	.00	444.97	52.37
403	310.00	.00	443.64	57.85
404	311.00	14.00	443.64	57.42
405	315.00	8.00	443.66	55.70
406	328.00	17.00	443.97	50.20
407	339.00	2.00	445.06	45.91
408	334.00	8.00	444.99	48.05
409	337.00	10.00	444.97	46.74
410	343.00	58.00	444.89	44.11
411	341.00	19.00	444.87	44.96
412	448.00	-829.51	448.00	.00
413	339.00	4.00	445.47	46.09
414	320.00	.00	443.58	53.50
415	317.00	23.00	443.57	54.79
416	312.00	.00	442.57	56.95
417	316.00	.00	443.57	55.23
418	323.00	2.00	443.59	52.16
419	290.00	.00	441.94	65.77

Node	Elevation FEET	Demand US GPM	HGL FEET	Pressure PSI
420	300.00	12.00	443.61	62.17
421	355.00	.00	448.00	40.26
422	325.00	.00	444.97	51.94
423	341.00	7.00	444.93	44.99
424	342.00	.00	444.93	44.56
425	331.00	2.00	444.27	49.03
426	330.00	.00	444.27	49.47
427	315.00	17.00	443.86	55.78
428	327.00	.00	443.59	50.47
429	307.00	.00	443.61	59.14
430	295.00	.00	443.61	64.33
431	296.00	19.00	443.61	63.90
432	330.00	4.00	444.04	49.37
433	319.00	6.00	443.73	54.00
434	316.00	5.00	443.65	55.26
435	315.00	9.00	443.65	55.69
436	317.00	.00	443.64	54.82
437	318.00	8.00	443.59	54.37
438	320.00	.00	443.60	53.51
439	298.00	.00	386.71	38.40
385	324.00	.00	387.20	27.36
386	310.00	.00	387.11	33.38

Max unbalanced head in a pseudo-loop is .6937
associated with source node # 308

Maximum unbalanced head in any loop .6937 In loop # 13

replacement cost analysis is presented in the Table "Water Distribution System Replacement Cost Analysis." This table describes all of the major components of the City's water supply and distribution system together with the 1989 replacement costs for them. This inventory and associated investment is supported by the City's water enterprise and water improvement funds. A budget history of these funds, in both current and constant dollars, is contained in the "water and water improvement fund" table(S). The operational requirements of both the water and sewer fund(S) are analyzed on a unit cost basis in the table "Water & Sewer Cost Analysis."

The City does not anticipate preparing a water system master plan but rather will address future system needs through the Capital Improvement Program, specific development requests, previously defined requirements and upgrades that may have been (or may be) identified through the on-going modeling and analysis process.

.220 SUPPLY

The City's primary source of water supply is from five, soon to be six, deep wells. Additional, or emergency, sources are available through interconnects with the City of Gresham and Wood Village.

The figure titled "Water Production History" depicts the City's water production levels for the past ten years. This production history indicates a stable and moderate growth cyclical with our climatological history. The graph "Water Productions / Consumption" details our system's water losses.

The City of Troutdale's water system produces most of its water for domestic (household) consumption. the graph titled "Water Rate Analysis (annual consumption profile)" depicts the makeup of our typical market. The "other users" element of this graphic are composed primary of agricultural and construction use. The preliminary analysis of studies currently underway suggest a measurable expansion of consumption in the commercial / industrial user categories. This consumption profile analysis will not be completed until June of 1989.

.221 DEEP WELLS

WATER DISTRIBUTION SYSTEM
REPLACEMENT COST ANALYSIS

DISTRIBUTION SYSTEM

A) Service Lines		Quantity	Cost/Each *	Total Cost
3/4"		2076	$330.00	$685,080.00
1"		106	$375.00	$39,750.00
1-1/2"		19	$485.00	$9,215.00
2"		17	$765.00	$13,005.00
3"		5	$850.00	$4,250.00
4"		1	$950.00	$950.00
	TOTAL	2224		$752,250.00

A) Water lines -CI-		Linear Ft	Cost/Foot *	Total Cost
4"		4,050	$16.09	$65,164.50
6"		29,545	$18.52	$547,173.40
8"		18,140	$20.77	$376,767.80
10"		14,220	$24.73	$351,660.60
12"		29,075	$28.09	$816,716.75
	TOTAL	95,030		$2,157,483.05

A) Water lines -PVC-		Linear Ft	Cost/Foot *	Total Cost
4"		390	$14.39	$5,612.10
6"		4,180	$17.10	$71,478.00
8"		3,265	$20.29	$66,246.85
10"		8,240	$24.71	$203,610.40
12"		30,630	$27.09	$829,766.70
	TOTAL	46,705		$1,176,714.05

A) Water lines -DI-		Linear Ft	Cost/Foot *	Total Cost
4"		3,855	$16.09	$62,026.95
6"		26,915	$18.52	$498,465.80
8"		21,850	$20.77	$453,824.50
10"		3,440	$24.73	$85,071.20
12"		3,895	$28.09	$109,410.55
	TOTAL	59,955		$1,208,799.00

B) Valves	Quantity	Cost/Each	Total Cost
Air & Air/Vacuum Release Valves			
3/4" AR	10	$300.00	$3,000.00
2" A & VR	12	$1,500.00	$18,000.00

WATER DISTRIBUTION SYSTEM
REPLACEMENT COST ANALYSIS

TOTAL			$21,000.00
Pressure Surge Release Valves			
4"	3	$3,200.00	$9,600.00
6"	1	$4,500.00	$4,500.00
TOTAL			$14,100.00
Altitude Valves			
4"	0	$0.00	$0.00
6"	2	$2,575.00	$5,150.00
8"	0	$0.00	$0.00
10"	0	$0.00	$0.00
12"	2	$5,385.00	$10,770.00
TOTAL			$15,920.00
Pressure Regulating Valves			
2"	2	$1,023.00	$2,046.00
4"	6	$1,410.00	$8,460.00
6"	0	$0.00	$0.00
8"	6	$3,252.00	$19,512.00
10"	2	$3,550.00	$7,100.00
12"	6	$4,410.00	$26,460.00
TOTAL			$61,532.00
Butterfly/Gate Valves			
4"	31	$285.00	$8,835.00
6"	170	$300.00	$51,000.00
8"	130	$450.00	$58,500.00
10"	39	$600.00	$23,400.00
12"	119	$750.00	$89,250.00
TOTAL			$230,985.00
Blow offs	97	300	$29,100.00
TOTAL ALL VALVES			
Fire Hydrants Assemblies	228	$1,950.00	$444,600.00
TOTAL/SERVICE LINES,VALVES,BLOW-OFFS & FIRE HYDRANTS			$6,112,483.10

C) Reservoirs	Quantity	Cost/Unit	Total Cost
No. 1 - 7th. Street/1MG (Improvements)		$350,000.00	$350,000.00
(Land)	**	N/A	$0.00
No. 2 - Stark Street/1MG (Improvements)		$280,000.00	$280,000.00
(Land)	0.15 Ac	$36,000.00	$5,400.00
No. 3 - Columbia Park/2MG (Improvements)		$550,000.00	$550,000.00
(Land)	0.55 Ac	$36,000.00	$19,800.00
No. 4 - Strebin Road/2MG (Improvements)		$550,000.00	$550,000.00
(Land)	2.02 Ac	$36,000.00	$72,720.00

WATER DISTRIBUTION SYSTEM
REPLACEMENT COST ANALYSIS

	TOTAL	2.72 Ac		$1,827,920.00
D) Wells		Quantity	Cost/Unit	Total Cost
No. 1 - Drinker	Improvements)		$80,000.00	$80,000.00
	(Land)	0.23 Ac.	$36,000.00	$8,280.00
No. 2 - Stark Street	(Improvements)		$150,000.00	$150,000.00
	(Land)	0.15 Ac.	$36,000.00	$5,400.00
No. 3 - 257Th Av.	(Improvements)		$165,000.00	$165,000.00
	(Land)	0.18 Ac.	$36,000.00	$6,480.00
No. 4 - 4Th Street	(Improvements)		$190,000.00	$190,000.00
	(Land)	0.99 Ac.	$36,000.00	$35,640.00
No. 5 - Undrilled	(Improvements)		N/A	$0.00
	(Land)	0.00 Ac.	$0.00	$0.00
No. 6 - Sweetbriar	(Improvements)		$170,000.00	$170,000.00
	(Land)	1.38 Ac.	$36,000.00	$49,680.00
No. 7 - Sandee Palisades	(Improvements)		$120,000.00	$120,000.00
	(Land)	***	$0.00	$0.00
	TOTAL (LAND & FACILITY)	2.93 Ac.		$980,480.00
	TOTAL/WATER DISTRIBUTION SYSTEM			$8,920,883.10

MAINTENANCE SYSTEM

	Quantity	Cost/Acre	Total Cost
A) Mechanical Shop & Appertanances (Improvements)			
TOTAL			

EQUIPMENT/SUPPLIES

	Total Cost
A) Rolling Stock	
B) Office & Misc	
C) Field, Shop & Grounds	
D) Supplies	
TOTAL	$0.00
TOTAL MAINTENANCE SYSTEM	$0.00
TOTAL FACILITY REPLACEMENT COST	$8,920,883.10

* Average depth of trench = 3 Ft.
** Reservoir is located on a 10 Ac. city park/watershed site
*** Well #7 is located on a 4.6 Ac. neighborhood park site

CITY OF TROUTDALE

06-Mar-90

WATER & WATER IMPROVEMENT FUND (Current Dollars)

RESOURCES/EXPENDITURES	1990-1991 (Budget Este)	1989-1990 (Budget)	1988-1989	1987-1988	1986-1987	1985-1986	1984-1985	1983-1984	1982-1983	1981-1982	1980-1981	1979-1980	1978-1979
RESOURCES													
WATER FUND													
Service Charge	$0	$539,233	$560,560	$540,112	$546,090	$584,733	$379,691	$307,090	$286,173	$237,459	$205,574	$153,361	$119,418
Improvement Changes	$0	$0	$0	$0	$0	$0	$27,934	$51,046	$140,938	$95,640	$108,755	$168,086	$269,325
Installation Changes	$0	$12,000	$15,903	$10,511	$9,215	$11,227	$7,501	$13,295	$26,010	$7,390	$36,035	$47,687	$71,369
Interest	$0	$1,500	$7,213	$4,339	$2,598	$6,540	$2,762	$15,337	$14,514	$19,092	$10,570	$10,016	$5,256
Interfund Loan, Transfers, Misc	$0	$3,500	$4,629	$16,164	$6,000	$3,782	$86,441	$13,319	$15,306	$4,069	$18,095	$5,925	$680
Beginning Retained	$0	$121,792	($36,170)	($4,522)	$26,595	$52,542	$26,221	$162,892	$207,406	$191,107	$284,599	$209,901	$39,323
Audit adjust		$0	$86,170	$0	$0	$0	$0	$38,827	$0	$263,975	$0	$0	$0
TOTAL	$0	$678,025	$638,305	$566,604	$590,498	$658,824	$530,550	$601,806	$690,347	$818,732	$663,628	$594,976	$525,371
WATER IMPROVEMENT FUND													
System Development Changes	$0	$35,000	$96,252	$58,616	$89,369	$31,060							
Interest & Misc	$0	$2,000	$9,982	$4,397	$0	$470							
Transfers & Inerfund loans	$0	$20,000	$20,000	$41,372	$41,320	$47,200							
Beginning Retained	$0	$146,179	$112,200	$43,841	($17,066)	$1,683							
TOTAL	$0	$203,179	$238,434	$148,226	$113,623	$80,493							
RESOURCE TOTAL	$0	$881,204	$876,739	$714,830	$704,121	$739,317	$530,550	$601,806	$690,347	$818,732	$663,628	$594,976	$525,371
EXPENDITURES													
WATER FUND													
Personnel Services	$0	$117,712	$105,517	$94,354	$91,765	$101,297	$104,526	$287,307	$223,352	$166,518	$173,377	$131,733	$96,699
Materials & Service	$0	$388,071	$277,617	$306,536	$286,696	$250,273	$239,745	$77,446	$74,531	$45,787	$72,258	$70,421	$49,043
Capital Outlay	$0	$7,590	$10,367	$14,433	$14,733	$16,460	$6,820	$35,397	$29,393	$127,086	$136,031	$46,893	$143,548
Debt (Principal)	$0	$0	$0	$0	$0	$0	$19,338	$18,417	$17,540	$0	$0	$0	$0
Debt (Interest)	$0	$92,862	$94,012	$95,340	$96,220	$97,235	$98,202	$99,123	$100,000	$100,000	$0	$0	$0
Tranfers & Interfund Loan(s)	$0	$20,000	$29,000	$92,111	$105,606	$166,964	$9,377	$57,895	$82,639	$171,935	$90,855	$62,130	$26,180
Contingency	$0	$10,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Year End Balance	$0	$121,790	$121,792	($36,170)	($4,522)	$26,595	$52,542	$26,221	$162,892	$207,406	$191,107	$284,599	$209,901
TOTAL	$0	$678,025	$638,305	$566,604	$590,498	$658,824	$530,550	$601,806	$690,347	$818,732	$663,628	$594,976	$525,371
WATER IMPROVEMENT FUND													
Capital Outlay	$0	$122,185	$68,727	$13,826	$46,779	$77,254							
Debt (Principal)	$0	$24,680	$23,528	$22,200	$21,320	$20,305							
Debt (Interest)	$0	$0	$0	$0	$0	$0							
Transfers & Inerfund loans	$0	$0	$0	$0	$1,683	$0							
Year End Balance	$0	$56,394	$146,179	$112,200	$43,841	($17,066)							
TOTAL	$0	$203,179	$238,434	$148,226	$113,623	$80,493							
EXPENDITURE TOTAL	$0	$881,204	$876,739	$714,830	$704,121	$739,317	$530,550	$601,806	$690,347	$818,732	$663,628	$594,976	$525,371
POPULATION	7,620	7,375	7,255	7,115	7,095	6,890	6,850	6,640	6,545	6,235	5,900	5,150	4,100
Cost/Capita *	$0.00	$91.94	$87.98	$79.64	$83.23	$95.62	$77.45	$90.63	$105.48	$131.31	$112.33	$115.53	$128.14
User fee/Capita *	$0.00	$73.12	$77.27	$75.91	$76.97	$84.87	$55.43	$46.25	$43.72	$38.08	$34.80	$29.78	$29.13
Total Production in 1000's	0	336,354 Este	305,554	316,347	307,023	293,152	283,232	235,984	252,443	277,446	219,677	194,433	175,523
Cost/1000 Gallons	0	$2.02	$1.96	$1.79	$1.92	$2.25	$1.87	$2.55	$2.73	$2.95	$3.02	$3.06	$2.99
User Fee/1000 Gallons	0	$1.60	$1.72	$1.71	$1.78	$1.99	$1.34	$1.30	$1.13	$0.86	$0.94	$0.79	$0.68

* Water fund only

CITY OF TROUTDALE — WATER & WATER IMPROVEMENT FUND — 21-Mar-89

Adjusted for Constant Dollars

RESOURCE/EXPENDITURES	1989-1990 (Prop Budget)	1988-1989 (Budget Est)	1987-1988	1986-1987	1985-1986	1984-1985	1983-1984	1982-1983	1981-1982	1980-1981	1979-1980	1978-1979
CONSUMER PRICE INDEX	345 Estm	335.8	324.7	316.8	312.4	301	290.1	287	278.2	255.4	225.4	198.4
WATER FUND												
Service Charge	$536,233	$557,205	$573,879	$594,700	$645,752	$435,194	$365,205	$344,006	$294,476	$277,694	$234,736	$207,657
Improvement Charges	$0	$0	$0	$0	$0	$32,017	$60,706	$169,420	$118,605	$146,909	$257,274	$503,111
Installation Charges	$15,000	$13,356	$11,168	$10,035	$12,399	$8,597	$15,811	$31,266	$9,164	$48,677	$72,990	$124,104
Interest	$1,500	$2,568	$4,610	$2,829	$7,222	$3,166	$18,239	$17,447	$23,676	$14,278	$15,331	$9,140
Miscellaneous	$3,500	$3,596	$17,175	$6,534	$4,177	$99,077	$15,840	$18,399	$5,046	$24,443	$9,069	$1,182
Beginning Retained	$0	($37,161)	($4,805)	$28,962	$58,025	$30,054	$239,893	$249,321	$564,354	$384,443	$321,277	$68,379
TOTAL	$556,233	$539,564	$602,028	$643,061	$727,575	$608,105	$715,695	$829,860	$1,015,322	$896,443	$910,678	$913,574
WATER IMPROVEMENT FUND												
System Development Changes	$35,000	$51,370	$62,281	$97,324	$34,301							
Interest	$2,000	$2,055	$4,672	$0	$519							
Transfers In	$20,000	$13,182	$43,959	$44,998	$52,214							
Beginning Retained	$100,000	$113,545	$44,794	($20,418)	$0							
TOTAL	$157,000	$180,151	$155,705	$121,904	$87,034							
RESOURCE TOTAL	$713,233	$719,715	$757,732	$764,966	$814,609	$608,105	$715,695	$829,860	$1,015,322	$896,443	$910,678	$913,574
EXPENDITURES												
WATER FUND												
Personnel Services	$117,712	$113,547	$100,253	$99,933	$111,868	$119,806	$341,678	$268,489	$206,501	$234,202	$201,632	$168,151
Materials & Service	$308,071	$304,702	$325,700	$312,216	$276,390	$274,791	$92,102	$89,593	$56,781	$97,608	$107,787	$85,281
Capital Outlay	$7,590	$11,522	$15,335	$16,044	$18,178	$7,817	$42,096	$35,333	$157,601	$183,754	$70,551	$249,617
Debt(Principal)	$0	$0	$0	$0	$0	$22,165	$21,902	$21,085	$0	$0	$0	$0
Debt(Interest)	$92,860	$96,611	$101,301	$104,785	$107,382	$112,557	$117,882	$120,209	$124,012	$0	$0	$0
Tranfers	$20,000	$13,182	$97,870	$115,007	$184,387	$10,748	$68,851	$99,340	$213,219	$122,729	$95,097	$45,525
Contingency	$10,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Year End Balance	$0	$0	($38,431)	($4,925)	$29,370	$60,223	$31,183	$195,811	$257,207	$258,152	$435,611	$364,999
TOTAL	$556,233	$539,564	$602,028	$643,061	$727,575	$608,105	$715,695	$829,860	$1,015,322	$896,443	$910,678	$913,574
WATER IMPROVEMENT FUND												
Capital Outlay	$132,320	$53,262	$14,690	$50,943	$85,316							
Debt(Principal)	$24,680	$24,149	$23,588	$23,218	$22,424							
Debt(Interest)	$0	$0	$0	$0	$0							
Tranfers	$0	$0	$0	$1,833	$0							
Year End Balance	$0	$102,740	$117,426	$45,911	($20,706)							
TOTAL	$157,000	$180,151	$155,705	$121,904	$87,034							
EXPENDITURE TOTAL	$713,233	$719,715	$757,732	$764,966	$814,609	$608,105	$715,695	$829,860	$1,015,322	$896,443	$910,678	$913,574
POPULATION	7,425 Estm.	7,255	7,255	7,115	7,095	6,890	6,850	6,640	6,545	6,235	5,908	5,150
Cost/Capita *	$74.91	$74.37	$82.98	$90.38	$102.55	$88.26	$104.48	$124.98	$155.13	$143.78	$154.14	$177.39
User Fee/Capita *	$72.22	$76.80	$79.10	$83.58	$91.02	$63.16	$53.31	$51.81	$44.99	$44.54	$39.73	$40.32

* Water fund only

CITY OF TROUTDALE

WATER & SEWER COSTS ANALYSIS
Current Dollars/Constant Dollars

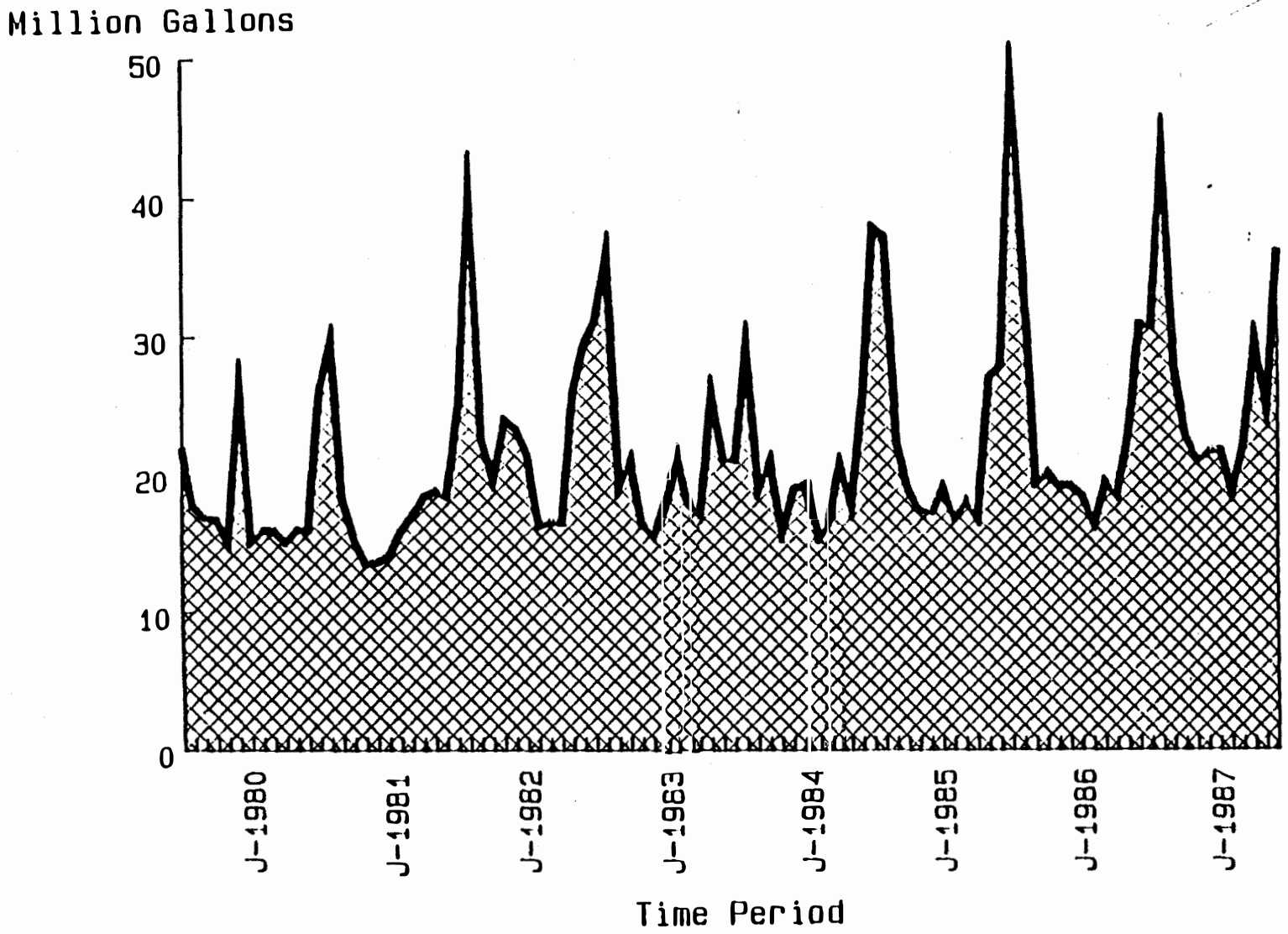
23-Mar-89

	YEAR	1989-1990	1988-1989	1987-1988	1986-1987	1985-1986	1984-1985	1983-1984	1982-1983	1981-1982	1980-1981	1979-1980	1978-1979
	POPULATION	7,425	7,255	7,115	7,095	6,890	6,850	6,640	6,545	6,235	5,908	5,150	4,100
	A A WATER A A												
	Total Gallons Produced	317,500,000 Est	316,989,515	323,661,957	295,496,000	292,950,857	267,576,000	240,557,286	259,904,286	254,898,571	218,430,698	178,301,800	178,301,800
C	Total Gallons/Capita	42,761 Est	43,693	45,490	41,648	42,518	39,062	36,229	39,710	40,882	36,972	34,622	43,488
U													
R	Total Cost	$556,233 Est	$525,176	$566,604	$590,498	$658,824	$530,550	$601,806	$690,347	$818,732	$663,628	$594,976	$525,371
R	Total Cost/1000 Gallons	$1.75 Est	$1.66	$1.75	$2.00	$2.25	$1.98	$2.50	$2.66	$3.21	$3.04	$3.34	$2.95
E	Total Cost/Capita	$74.91 Est	$72.39	$79.64	$83.23	$95.62	$77.45	$90.63	$105.48	$131.31	$112.33	$115.53	$128.14
N													
T	Service Charge	$536,233 Est	$542,346	$540,112	$546,090	$584,733	$379,691	$307,090	$286,173	$237,459	$205,574	$153,361	$119,418
	Service Charge/1000 Gallons	$1.69 Est	$1.71	$1.67	$1.85	$2.00	$1.42	$1.28	$1.10	$0.93	$0.94	$0.86	$0.67
	Service Charge/Capita	$72.22 Est	$74.75	$75.91	$76.97	$84.87	$55.43	$46.25	$43.72	$38.08	$34.80	$29.78	$29.13
	A A SEWER A A												
	Total Gallons Processed	305,000,000 Est	299,608,000	323,803,000	310,959,000	240,373,000	243,647,000	212,892,000	198,479,000	210,643,000	218,092,000	197,060,000	157,516,000
D	Total Gallons/Capita	41,077 Est	41,297	45,510	43,828	34,887	35,569	32,062	30,325	33,784	36,915	38,264	38,419
O													
L	Total Cost	$488,187 Est	$454,849	$504,735	$536,156	$500,900	$501,471	$498,138	$422,568	$371,968	$611,364	$840,033	$1,692,824
L	Total Cost/1000 Gallons	$1.60 Est	$1.52	$1.56	$1.73	$2.08	$2.06	$2.34	$2.13	$1.77	$2.80	$4.26	$10.75
A	Total Cost/Capita	$65.75 Est	$62.69	$70.94	$75.57	$72.70	$73.21	$75.02	$64.56	$59.66	$103.48	$163.11	$412.88
R													
S	Service Charge	$485,187 Est	$396,938	$379,500	$388,394	$354,568	$355,291	$236,877	$206,312	$167,871	$143,324	$108,983	$75,132
	Total Cost/1000 Gallons	$1.59 Est	$1.32	$1.17	$1.25	$1.48	$1.46	$1.11	$1.04	$0.80	$0.66	$0.55	$0.48
	Total Cost/Capita	$65.35 Est	$54.71	$53.34	$54.74	$51.46	$51.87	$35.67	$31.52	$26.92	$24.26	$21.16	$18.32

	YEAR	1989-1990	1988-1989	1987-1988	1986-1987	1985-1986	1984-1985	1983-1984	1982-1983	1981-1982	1980-1981	1979-1980	1978-1979
	POPULATION	7,425	7,255	7,115	7,095	6,890	6,850	6,640	6,545	6,235	5,908	5,150	4,100
	CONSUMER PRICE INDEX	345 Est	335.8	336.6	316.8	312.4	301	290.1	287	278.2	255.4	225.4	198.4
	A A WATER A A												
C	Total Gallons Produced	317,500,000 Est	316,989,515	323,661,957	295,496,000	292,950,857	267,576,000	240,557,286	259,904,286	254,898,571	218,430,698	178,301,800	178,301,800
O	Total Gallons/Capita	42,761 Est	43,693	45,490	41,648	42,518	39,062	36,229	39,710	40,882	36,972	34,622	43,488
N													
S	Total Cost	$556,233 Est	$539,564	$580,744	$643,061	$727,575	$608,105	$715,695	$829,860	$1,015,322	$896,443	$910,678	$913,574
T	Total Cost/1000 Gallons	$1.75 Est	$1.70	$1.79	$2.18	$2.48	$2.27	$2.98	$3.19	$3.98	$4.10	$5.11	$5.12
A	Total Cost/Capita	$74.91 Est	$74.37	$81.62	$90.64	$105.60	$88.77	$107.79	$126.79	$162.84	$151.73	$176.83	$222.82
N													
T	Service Charge	$536,233 Est	$557,205	$553,591	$594,700	$645,752	$435,194	$365,205	$344,006	$294,476	$277,694	$234,736	$207,657
	Service Charge/1000 Gallons	$1.69 Est	$1.76	$1.71	$2.01	$2.20	$1.63	$1.52	$1.32	$1.16	$1.27	$1.32	$1.16
	Service Charge/Capita	$72.22 Est	$76.80	$77.81	$83.82	$93.72	$63.53	$55.00	$52.56	$47.23	$47.00	$45.58	$50.65
	A A SEWER A A												
	Total Gallons Processed	305,000,000 Est	299,608,000	323,803,000	310,959,000	240,373,000	243,647,000	212,892,000	198,479,000	210,643,000	218,092,000	197,060,000	157,516,000
D	Total Gallons/Capita	41,077 Est	41,297	45,510	43,828	34,887	35,569	32,062	30,325	33,784	36,915	38,264	38,419
O													
L	Total Cost	$488,187 Est	$467,311	$517,331	$583,882	$553,171	$574,776	$592,408	$507,965	$461,283	$825,844	$1,285,765	$2,943,671
L	Total Cost/1000 Gallons	$1.60 Est	$1.56	$1.60	$1.88	$2.30	$2.36	$2.78	$2.56	$2.19	$3.79	$6.52	$18.69
A	Total Cost/Capita	$65.75 Est	$64.41	$72.71	$82.29	$80.29	$83.91	$89.22	$77.61	$73.98	$139.78	$249.66	$717.97
R													
S	Service Charge	$485,187 Est	$407,813	$388,971	$422,967	$391,568	$407,227	$281,705	$248,006	$208,179	$193,605	$166,811	$130,648
	Total Cost/1000 Gallons	$1.59 Est	$1.36	$1.20	$1.36	$1.63	$1.67	$1.32	$1.25	$0.99	$0.89	$0.85	$0.83
	Total Cost/Capita	$65.35 Est	$56.21	$54.67	$59.61	$56.83	$59.45	$42.43	$37.89	$33.39	$32.77	$32.39	$31.87

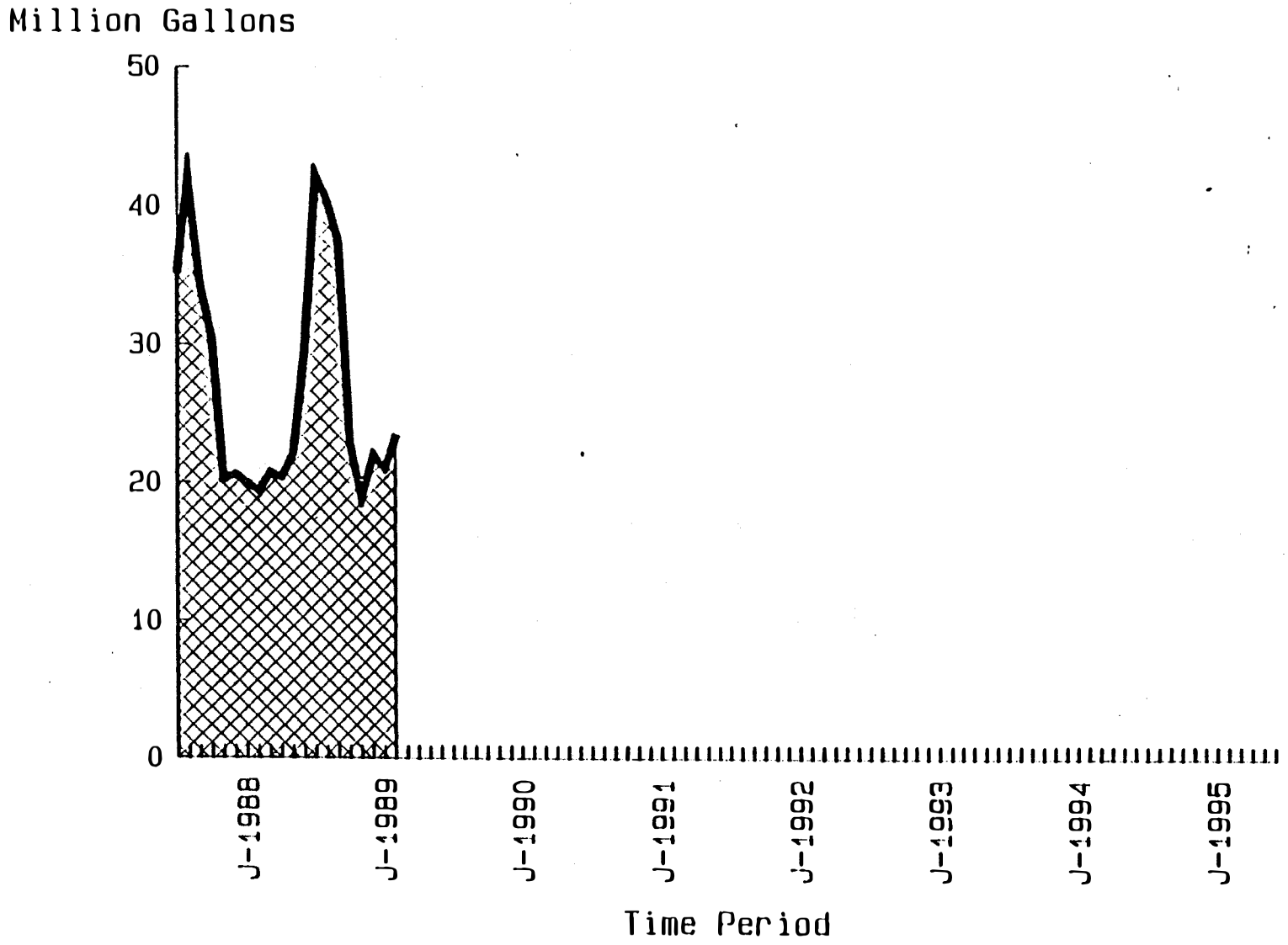
Water Production History

City of Troutdale



Water Production History

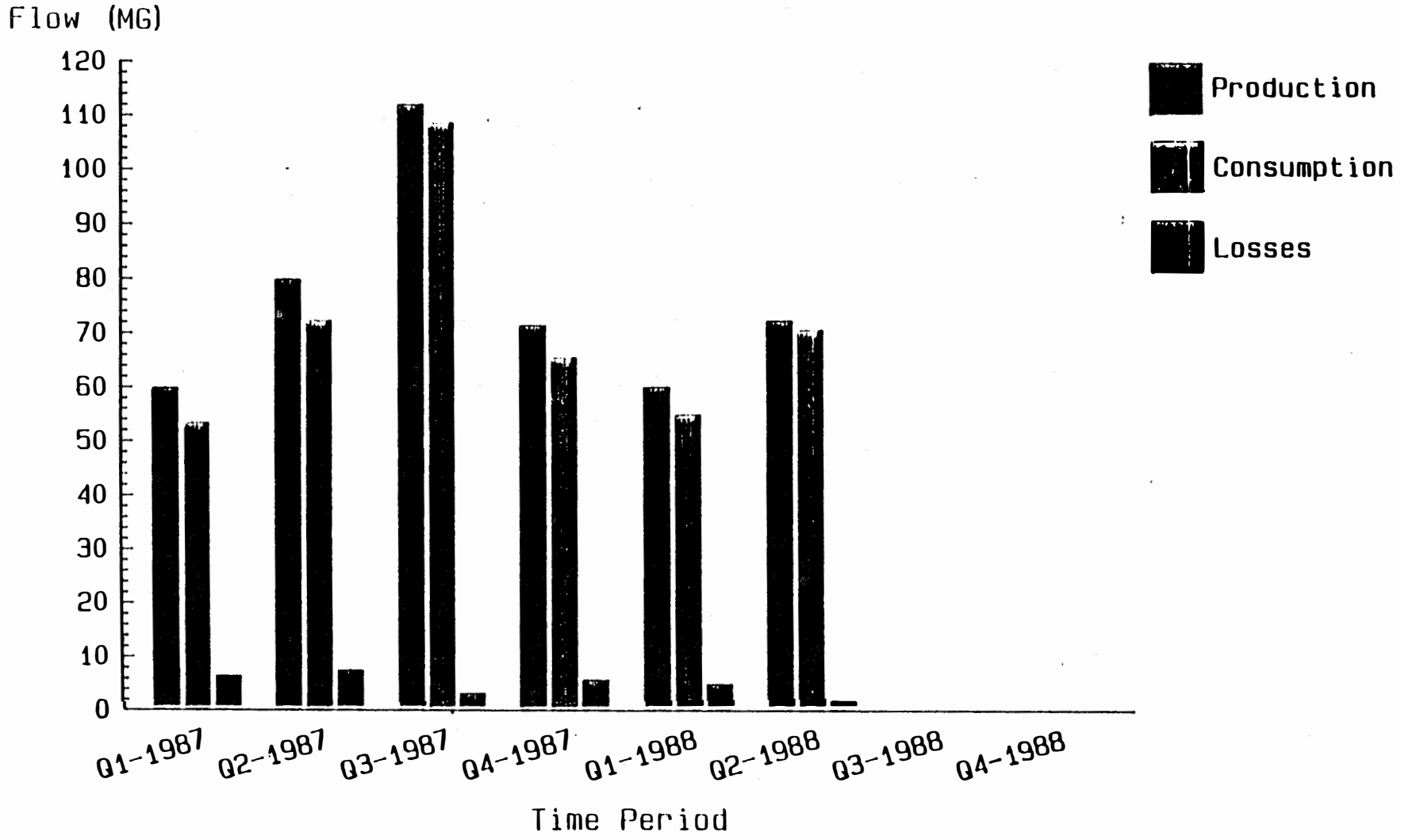
City of Troutdale



Water Production / Consumption

City of Troutdale, Oregon

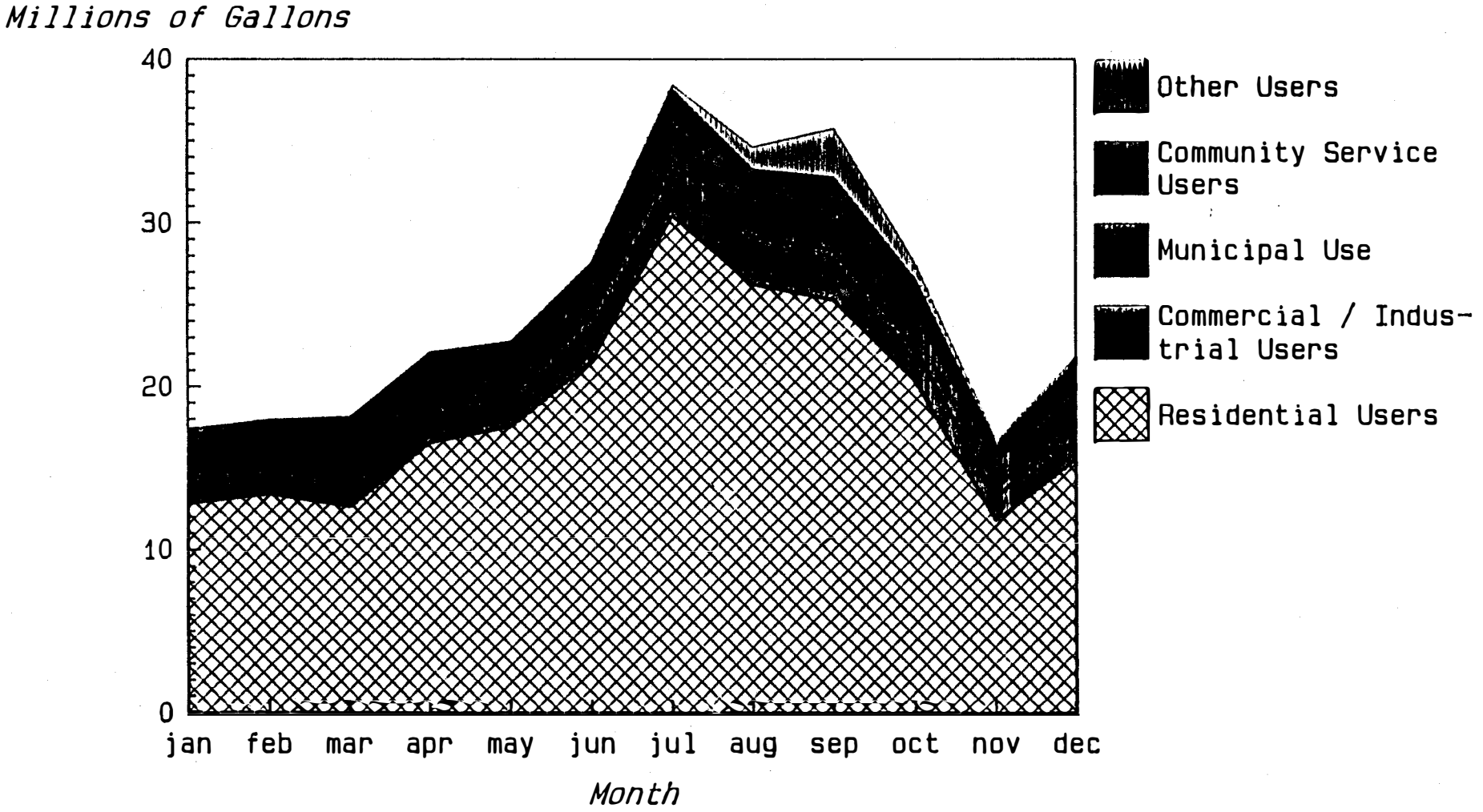
Department of Community Services



Water Rate Analysis

Annual Consumption Profile (CY 1987)

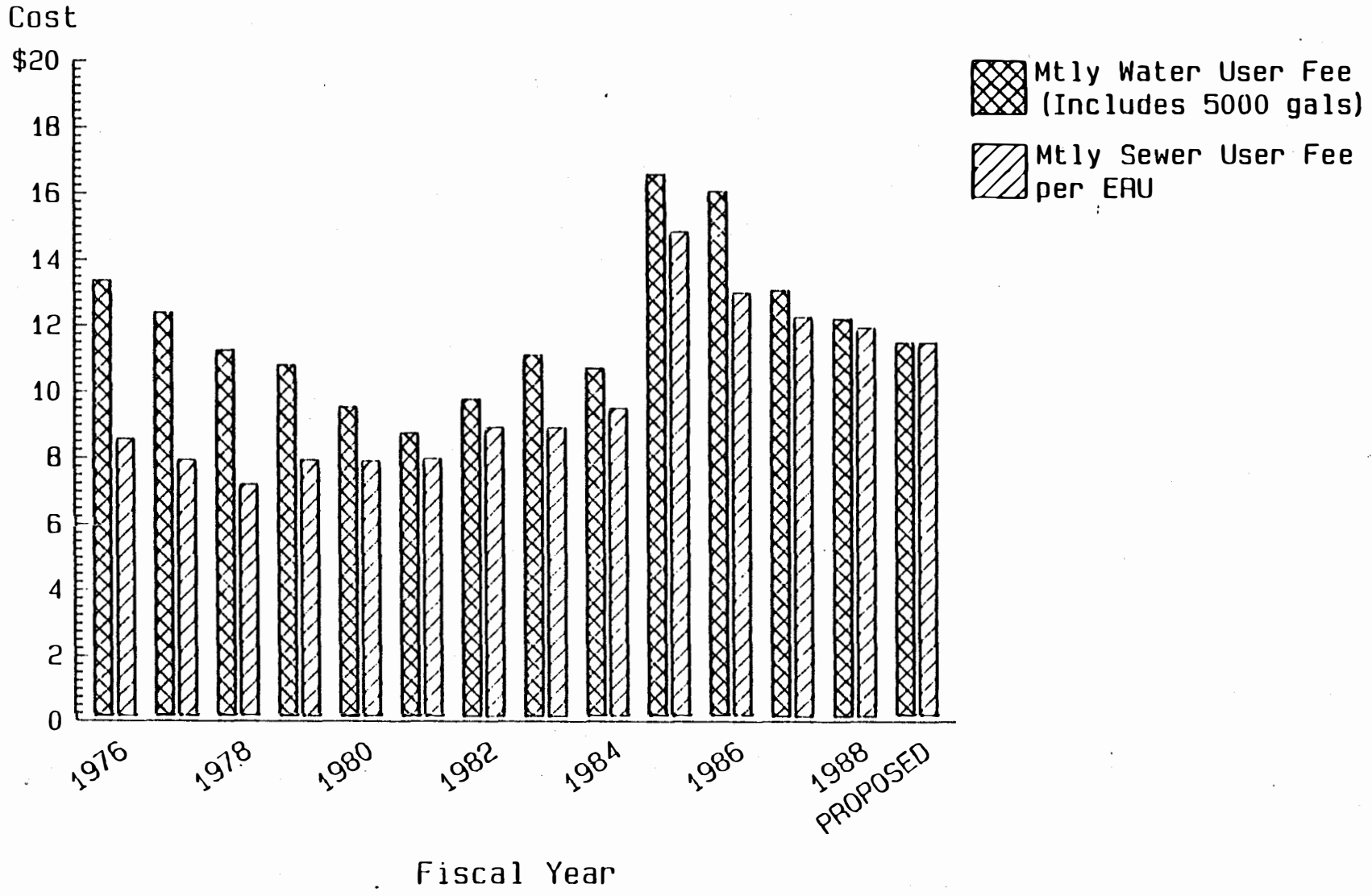
City of Troutdale, Oregon



Water & Sewer User Fee History

Constant Dollars

City of Troutdale, Oregon



The City's primary source of water is from a series of deep wells. The production history of these supply sources is contained in the table "All Well Water Production Summary" which contains over ten years of production data summarized by well on a monthly, bimonthly, quarterly and annual basis. The table "Water Quality Analysis" compares the currently required EPA/DEQ standards to the quality of the City's water produced from these wells. Each of these wells is identified and located on the map "Water Distribution System." Each of them is also defined comparatively in cross-section on the graphic titled "Supply System Cross-Section."

These wells have a total capacity of 3345 gpm, enough to meet the maximum daily demand for a population equivalent of almost 15,000. The table "Flow Rate & Storage Analysis" evaluates our production capacity.

A brief history and condition analysis of each of the wells is presented as follows:

Well #1 (SW 1/4 of Section 36, T1N, R3E) was initially drilled in 1976 and re-drilled in 1978. It has subsequently failed, providing little water for the system. The City is currently studying the feasibility of revitalizing that well or permanently abandoning it.

Well #2, located on Stark Street (SW 1/4 of Section 35, T1N, R3E) currently produces 525 gallons per minute. This well, and associated facilities, are in excellent condition. The City expects to use this facility during its growth to population saturation and full development. The usual requirements for well rehabilitation and equipment renewal and replacement are expected and it should provide for a permanent source of water.

Well #3 (NE 1/4 of Section 35, T1N, R3E) was drilled in 1979 and is located adjacent to 257th Avenue. This well produces 510 gallons per minute and its support facilities are contained in an underground vault. All indications suggest that this facility will be a permanent supply source for the City, and subject only to the required renewal and replacement and rehabilitation programs.

Well #4 (SW 1/4 of Section 25, T1N, R3E) was drilled in 1979 and its support facilities are housed in a concrete block above ground structure. This well produces 950 gallons per minute and is

ALL WELL WATER PRODUCTION SUMMERY

DATE	WELL #1 Production	WELL #2 Production	WELL #3 Production	WELL #4 Production	WELL #6 Production	TOTAL	BIMONTHLY TOTALS	QUARTERLY TOTALS
10/78	0	0	0	0	0	0		
11/78	0	11,585,143	0	0	0	11,585,143		
12/78	0	12,748,714	0	0	0	12,748,714	24,333,857	24,333,857
Annual Total(s)	0	24,333,857	0	0	0	24,333,857		
01/79	0	16,220,714	0	0	0	16,220,714		
02/79	0	12,486,286	0	0	0	12,486,286	28,707,000	
03/79	0	12,154,714	0	0	0	12,154,714		40,861,714
04/79	0	12,504,730	0	0	0	12,504,730	24,659,444	
05/79	0	13,670,556	0	0	0	13,670,556		
06/79	2,871,000	14,834,571	0	0	0	17,705,571	31,376,127	43,880,857
07/79	0	14,041,429	0	0	0	14,041,429		
08/79	6,210,000	14,620,909	0	0	0	20,830,909	34,872,338	
09/79	0	16,284,234	0	0	0	16,284,234		51,156,572
10/79	0	15,946,142	0	0	0	15,946,142	32,230,375	
11/79	0	13,037,715	0	0	0	13,037,715		
12/79	0	13,418,800	0	0	0	13,418,800	26,456,515	42,402,657
Annual Total(s)	9,081,000	169,220,800	0	0	0	178,301,800	178,301,800	178,301,800
/80	0	14,482,343	0	0	0	14,482,343		
02/80	0	14,605,000	0	0	0	14,605,000	29,087,343	
03/80	445,000	14,086,642	0	0	0	14,531,642		43,618,985
04/80	291,000	24,277,478	0	0	0	24,568,478	39,100,120	
05/80 **	0	4,183,166	0	0	0	16,732,664		
06/80	1,270,571	13,654,000	1,029,429	0	0	15,954,000	32,686,664	57,253,142
07/80	4,660,429	16,415,857	6,543,285	0	0	27,619,571		
08/80	1,429,500	11,984,785	14,702,072	0	0	28,116,357	55,735,928	
09/80	3,923,214	13,004,929	1,490,214	0	0	18,418,357		74,154,285
10/80	3,897,536	12,169,875	280,000	0	0	16,347,411	34,765,768	
11/80	1,992,607	11,323,125	0	0	0	13,315,732		
12/80	3,254,143	10,485,000	0	0	0	13,739,143	27,054,875	43,402,286
Annual Total(s)	21,164,000	160,672,200	24,045,000	0	0	218,430,698	218,430,698	218,430,698
01/81	2,019,426	12,060,429	0	0	0	14,079,855		
02/81	2,279,574	11,649,856	1,881,000	0	0	15,810,430	29,890,285	
03/81	3,499,143	16,053,429	923,000	0	0	20,475,572		50,365,857
04/81	2,259,143	13,634,857	10,000	0	0	15,904,000	36,379,572	
05/81	3,378,143	14,081,929	635,000	0	0	18,095,072		
06/81	4,057,428	13,595,357	103,000	0	0	17,755,785	35,850,857	51,754,857
07/81	6,633,429	15,974,000	4,847,714	0	0	27,455,143		
08/81	6,519,428	13,895,714	19,780,286	0	0	40,195,428	67,650,571	
09/81	6,032,286	14,205,429	2,117,000	0	0	22,354,715		90,005,286
10/81	111,429	10,645,000	9,158,429	0	0	19,914,858	42,269,573	
/81	132,000	10,356,000	12,366,571	0	0	22,854,571		
12/81	119,571	11,055,571	8,828,000	0	0	20,003,142	42,857,713	62,772,571

ALL WELL WATER PRODUCTION SUMMERY

DATE	WELL #1 Production	WELL #2 Production	WELL #3 Production	WELL #4 Production	WELL #6 Production	TOTAL	BIMONTHLY TOTALS	QUARTERLY TOTALS
Annual Total(s)	37,041,000	157,207,571	60,650,000	0	0	254,898,571	254,898,571	254,898,571
01/82	252,000	8,715,143	12,338,429	0	0	21,305,572		
02/82	0	8,232,143	6,213,071	836,000	0	15,281,214	36,586,786	
03/82	54,000	4,136,143	8,674,500	4,406,000	0	17,270,643		53,857,429
04/82	84,000	287,714	12,966,429	3,521,000	0	16,859,143	34,129,786	
05/82	1,000	4,560,572	14,814,428	3,939,714	0	23,315,714		
06/82	534,000	8,261,714	15,762,143	6,078,286	0	30,636,143	53,951,857	70,811,000
07/82	871,000	12,329,500	12,733,000	6,413,571	0	32,347,071		
08/82	386,286	10,903,071	15,027,857	5,960,286	0	32,277,500	64,624,571	
09/82	5,714	8,429,143	7,036,000	4,785,714	0	20,256,571		84,881,142
10/82	183,571	11,156,572	4,284,643	3,427,429	0	19,052,215	39,308,786	
11/82	225,429	7,979,839	3,364,214	2,386,553	0	13,956,035		
12/82	8,000	539,161	13,100,857	3,698,447	0	17,346,465	31,302,500	50,354,715
Annual Total(s)	2,605,000	85,530,715	126,315,571	45,453,000	0	259,904,286	259,904,286	259,904,286
01/83	20,000	469,714	8,991,572	3,654,857	3,211,143	16,347,286		
02/83	0	627,286	8,264,571	3,808,857	4,701,571	17,402,285	33,749,571	
03/83	0	778,714	9,969,715	3,976,857	5,330,000	20,055,286		53,804,857
04/83	0	479,000	7,653,713	4,153,858	5,089,429	17,376,000	37,431,286	
05/83	0	20,000	7,722,715	5,145,428	10,288,857	23,177,000		
06/83	7,000	90,000	3,851,286	5,285,286	13,615,571	22,849,143	46,026,143	63,403,143
07/83	0	1,356,571	1,876,428	5,353,428	12,191,143	20,777,570		
08/83	0	2,726,429	2,691,429	5,468,429	18,103,286	28,989,573	49,767,143	
09/83	3	3,254,000	88,000	4,997,143	10,896,429	19,035,572		68,802,715
10/83	0	2,725,286	444,000	4,736,428	10,708,142	18,613,856	37,649,428	
11/83	0	2,466,714	165,000	4,481,429	9,856,429	16,969,572		
12/83	0	3,471,143	163,000	3,825,714	11,504,286	18,964,143	35,933,715	54,547,571
Annual Total(s)	27,000	18,264,857	51,881,429	54,887,714	115,496,286	240,557,286	240,557,286	240,557,286
01/84	0	2,926,000	835,000	4,427,572	10,904,714	19,093,286		
02/84	0	3,156,857	0	3,722,714	9,260,000	16,139,571	35,232,857	
03/84	0	2,676,571	76,000	4,486,286	10,624,286	17,863,143		53,096,000
04/84	0	2,613,715	11,857	4,114,571	10,399,285	17,139,428	35,002,571	
05/84	0	2,796,428	210,786	4,032,286	11,246,715	18,286,215		
06/84	0	4,257,786	0	4,615,857	15,238,714	24,112,357	42,398,572	59,538,000
07/84	0	7,239,071	0	6,818,714	22,057,571	36,115,356		
08/84	0	7,570,572	8,357	6,497,715	28,750,858	42,827,502	78,942,858	
09/84	0	3,262,571	5,000	5,264,285	12,554,285	21,086,141		100,028,999
10/84	0	1,481,286	1,300,000	5,211,286	10,353,286	18,345,858	39,431,999	
11/84	0	151,571	2,536,714	4,854,714	10,233,286	17,776,285		
12/84	0	96,429	2,818,286	4,588,429	11,287,714	18,790,858	36,567,143	54,913,001
Annual Total(s)	0	38,228,857	7,902,300	58,634,429	162,910,714	267,576,000	267,576,000	267,576,000

ALL WELL WATER PRODUCTION SUMMERY

DATE	WELL #1 Production	WELL #2 Production	WELL #3 Production	WELL #4 Production	WELL #6 Production	TOTAL	BIMONTHLY TOTALS	QUARTERLY TOTALS
01/85	0	72,000	2,960,000	5,773,286	9,524,429	18,329,715		
02/85	0	38,000	2,716,500	4,927,071	9,859,071	17,540,642	35,870,357	
03/85	0	259,000	2,730,500	4,755,929	10,387,071	18,132,500		54,002,857
04/85	0	0	3,189,143	5,163,000	11,675,000	20,027,143	38,159,643	
05/85	0	0	4,486,143	5,421,714	15,107,429	25,015,286		
06/85	0	751,000	4,991,857	6,034,428	17,467,857	29,245,142	54,260,428	74,287,571
07/85	0	130,000	11,062,857	8,819,429	29,383,143	49,395,429		
08/85	0	2,209,000	5,490,714	7,600,571	19,367,571	34,667,856	84,063,285	
09/85	0	276,571	3,029,143	5,578,715	12,725,715	21,610,144		105,673,429
10/85	0	1,150,429	2,005,143	5,002,571	11,997,571	20,155,714	41,765,858	
11/85	0	31,000	3,463,000	4,740,572	11,023,143	19,257,715		
12/85	0	0	3,293,000	4,904,571	11,376,000	19,573,571	38,831,286	58,987,000
Annual Total(s)	0	4,917,000	49,418,000	68,721,857	169,894,000	292,950,857	292,950,857	292,950,857
01/86	0	1,208,833	1,956,000	4,716,167	10,604,167	18,485,167		
02/86	0	398,881	2,484,857	4,305,404	9,562,333	16,751,475	35,236,642	
03/86	0	171,143	3,089,000	5,060,715	10,837,214	19,158,072		54,394,714
04/86	0	162,143	2,945,143	4,372,714	11,149,286	18,629,286	37,787,358	
05/86	0	70,000	4,055,143	4,588,714	14,346,857	23,060,714		
[illegible]/86	0	3,758,571	1,987,857	6,121,572	20,539,000	32,407,000	55,467,714	74,097,000
/86	0	4,840,572	232,571	5,699,857	18,654,857	29,427,857		
08/86	0	8,849,428	1,364,853	6,811,143	27,427,857	44,453,286	73,881,143	
09/86	0	4,315,715	636,571	6,198,143	16,472,572	27,623,001		101,504,144
10/86	0	3,316,047	93,000	5,753,904	13,357,190	22,520,141	50,143,142	
11/86	0	2,835,238	937,000	5,344,381	12,184,810	21,301,429		
12/86	0	3,845,429	110,000	5,588,286	12,134,857	21,678,572	42,980,001	65,500,142
Annual Total(s)	0	33,772,000	19,892,000	64,561,000	177,271,000	295,496,000	295,496,000	295,496,000
01/87	0	3,859,286	296,714	4,916,857	12,704,143	21,777,000		
02/87	0	3,840,214	310,286	4,493,143	10,728,357	19,372,000	41,149,000	
03/87	0	968,500	838,714	4,867,857	12,193,214	18,868,285		60,017,285
04/87	0	2,152,300	1,345,572	4,730,000	12,446,143	20,674,015	39,542,300	
05/87	0	4,489,457	328,714	4,530,143	16,529,572	25,877,836		
06/87	0	198,214	5,293,577	6,343,714	21,613,571	33,449,076	59,326,962	80,200,977
07/87	0	2,858,200	5,135,423	6,560,119	20,725,667	35,279,409		
08/87	0	7,680,900	956,429	7,401,596	26,147,762	42,186,687	77,466,096	
09/87	0	3,916,500	3,080,571	6,638,571	21,006,571	34,642,213		112,108,309
10/87	0	380,700	4,630,143	5,793,000	19,826,143	30,629,986	65,272,199	
11/87	0	2,837,800	3,734,286	4,890,429	8,785,143	20,247,658		
12/87	0	3,211,029	4,255,428	4,838,857	8,352,428	20,657,742	40,905,400	71,535,386
Annual Total(s)	0	36,393,100	30,205,857	66,204,286	191,358,714	323,661,957	323,661,957	323,661,957
[illegible]/88	0	6,042,671	1,136,000	4,257,714	8,534,429	19,970,814		
88	0	5,974,657	828,236	4,321,857	7,843,286	19,468,036	39,438,900	
03/88	0	6,396,572	753,357	5,116,572	8,521,142	20,788,143		60,227,043

ALL WELL WATER PRODUCTION SUMMERY

DATE	WELL #1 Production	WELL #2 Production	WELL #3 Production	WELL #4 Production	WELL #6 Production	TOTAL	BIMONTHLY TOTALS	QUARTERLY TOTALS
04/88	0	5,414,714	1,899,000	4,608,142	8,532,286	20,454,142	41,242,285	
05/88	0	10,146,443	5,356,714	5,295,143	1,410,143	22,208,443		
06/88	0	12,232,028	10,136,857	7,444,286	0	29,813,171	52,021,614	72,475,756
07/88	0	14,740,529	15,593,429	11,949,000	0	42,282,958		
08/88	0	10,553,000	13,463,000	16,444,000	0	40,460,000	82,742,958	
09/88	0	11,920,600	12,015,000	13,564,571	0	37,500,171		120,243,129
10/88	0	9,005,300	1,642,286	12,246,572	0	22,894,158	60,394,329	
11/88	0	6,838,000	6,646,714	5,592,857	0	19,077,571		
12/88	0	9,470,286	8,088,286	4,513,286	0	22,071,858	41,149,429	64,043,587
Annual Total(s)	0	108,734,800	77,559,429	95,854,000	34,841,286	316,989,515	316,989,515	316,989,515
01/89	0	8,780,714	3,416,285	3,965,000	4,958,286	21,120,285		
02/89	0	3,336,300	2,077,429	4,390,714	13,625,714	23,430,157	44,550,442	
03/89	0	3,321,700	384,000	2,282,857	12,867,000	18,855,557		63,405,999
04/89	0	1,879,614	2,382,000	4,172,000	12,441,714	20,875,328	39,730,885	
05/89	0	5,139,986	535,000	4,686,143	15,486,166	25,847,295		
06/89	0	5,736,957	3,617,571	5,644,143	16,139,571	31,138,242	56,985,537	77,860,865
07/89	0	7,914,272	3,973,858	6,393,286	15,797,143	34,078,559		
08/89	0	10,323,085	2,131,319	6,706,571	14,029,143	33,190,118	67,268,677	
09/89	0	7,927,472	2,619,571	5,106,857	13,565,429	29,219,329		96,488,006
/89	0	8,122,614	254,000	9,544,143	9,123,714	27,044,471	56,263,800	
11/89	0	7,181,100	139,000	6,035,875	8,192,125	21,548,100		
12/89	0	7,661,100	141,571	4,968,125	8,843,589	21,614,385	43,162,485	78,206,956
Annual Total(s)	0	77,324,914	21,671,604	63,895,714	145,069,594	307,961,826	307,961,826	307,961,826
01/90								
02/90								
03/90								
04/90								
05/90								
06/90								
07/90								
08/90								
09/90								
10/90								
11/90								
12/90								

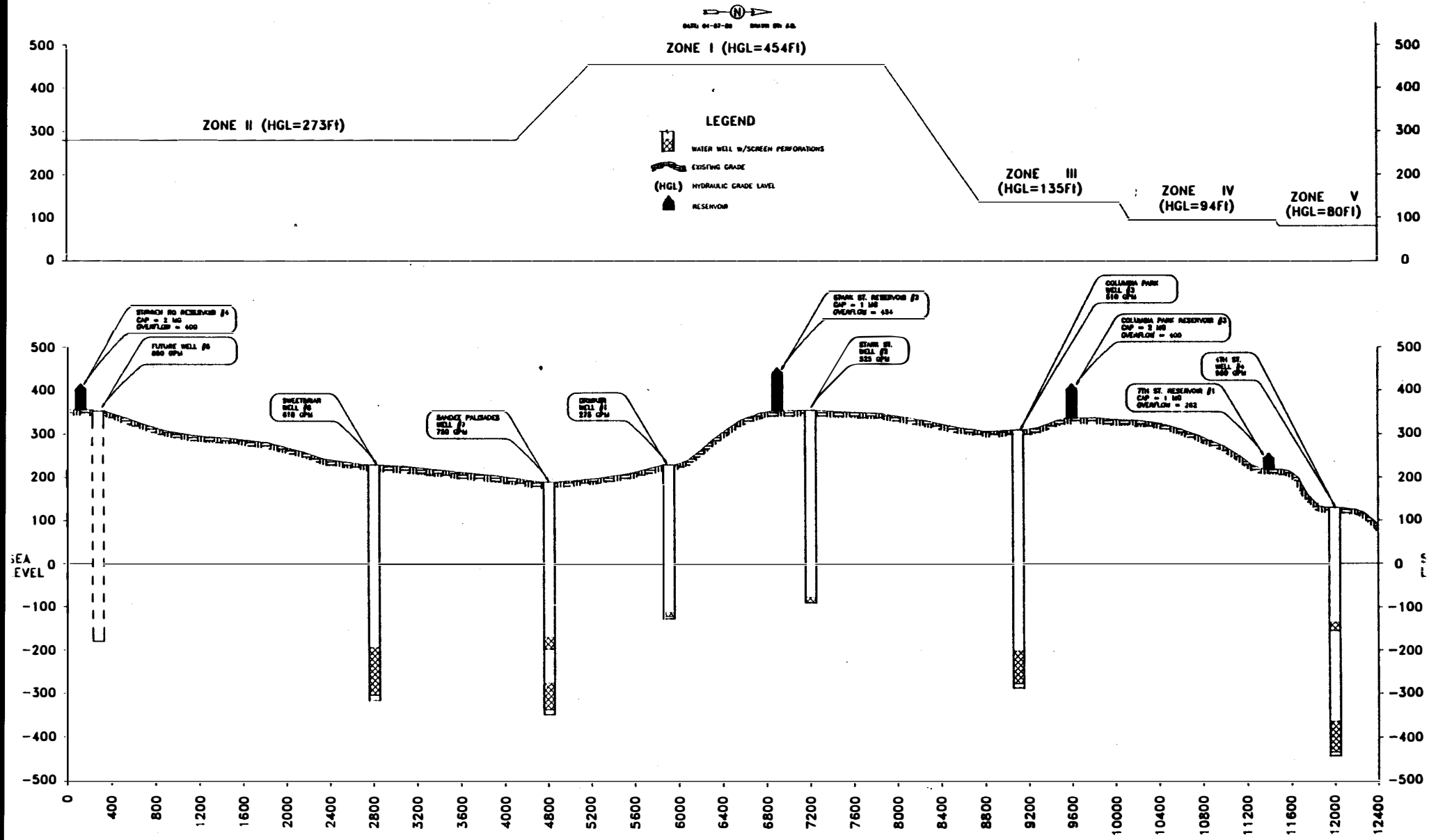
WATER QUALITY ANALYSIS

WELL/PUMP	YEAR DRILLED	YEAR IN SERVICE	HGL ELEVATION	CAPACITY	HORSEPOWER	DRILLED DEPTH	ZONES SERVED
#1	5-30-78 to 7-19-78	Late '78	74 lbs. 231.5'	- 0 -	100	356'	II
#2	7-19-76 to 9-20-76	6-15-77	44 lbs. 354'	500 GPM	150	485'	I
#3	12-27-78 to 4-11-79	5-28-79	65 lbs. 305.5'	485 GPM	100	615'	I
#4	4-01-80 to 8-07-80	2-17-82	49 lbs. 129'	950 GPM	125	573'	IV
#5	N/A	N/A	16 lbs.			N/A	II
#6	8 - 80 to 1 - 81	1-9-83	74 lbs. 230'	610 GPM	125	545'	II
#7	8-19-80 to 12-09-80	Not in Service	89 lbs. 194'	N/A	N/A	575'	II
Booster #1	N/A	Mid '74	44 lbs.	770 GPM	15	N/A	I

#7

WATER SUPPLY SYSTEM CROSS-SECTION

CITY OF TROUTDALE



located adjacent to the City's Public Works facilities. This well and supporting facilities are considered to be a permanent part of the City's supply system and are expected to meet current production levels on a "permanent" basis.

Well #5 (NE 1/4 of Section 12, T1N, R3E) has not been drilled. The future location of this facility has been identified and is adjacent to the Strebin Road Reservoir. This well will not be drilled until the year 2000, or until such time as population demands or development pressures require.

Well #6 is located immediately adjacent to the Sweetbriar Grade School (NE 1/4 of Section 1, T1N, R3E). This well was drilled in 1979 and currently produces 610 gallons per minute. This well and its supporting equipment are located in an underground vault. This facility is expected to serve a permanent production source. This facility is the first in the City to be equipped with "real-time" well level monitoring equipment.

Well #7 (SE 1/4 of Section 36, T1N, R3E) was drilled in 1980 but was not placed in service. In early 1989, the City constructed a concrete block well house and installed the necessary connecting piping and electrical supply in order to install a 750 gallon per minute pump and motor late this same year. It will also contain real-time level and production monitoring equipment tied to the City's telemetry and computing system.

.222 SUPPLY INTERCONNECTS

The City maintains an emergency interconnect with the City of Gresham at its Stark Street facilities. This interconnect can supply water in either direction and has a supply capacity of 2500 gpm. There is no formal agreement between the cities for the use of this interconnect. The City of Troutdale has purchased water from the City of Gresham during times when equipment was out of service or undergoing major maintenance. This interconnect provides for "weak link" reinforcement should any system wide facility experience a major "long term" failure.

The remaining two interconnects are between the City of Troutdale and Wood Village, and are located at the Columbia Reservoir and in Halsey Street. These interconnects allow the passing of water in either direction at a rate of 1500 gpm and 2500 gpm

respectively. No formal intercity agreements have been entered into and the City of Troutdale has supplied water to Wood Village during periods of high demand and fire flow needs.

.223 WATER QUALITY

The quality of water from the City's well system is exceptional. The table "Water Quality Analysis" depicts a comparison of our water with the National drinking water standards.

Over the past five years, the City has provided a higher level of water quality monitoring than has been required by the State and federal regulatory agencies. We have done this to vigilantly protect our supply resource (and customers) from the potential external contamination or excess withdrawal by other jurisdictions. The City consistently meets or betters all regulatory standards.

.230 STORAGE

The City owns and operates four reservoirs with a total storage capacity of six million gallons, enough to meet the fire flow and domestic demand for a population equivalent of about 16,000. A fifth reservoir site has been acquired for the future construction of a storage facility to provide additional fire protection to the northern industrial portion of the community. The map "Water Distribution System" locates each of the City's reservoirs.

.231 FACILITY DESCRIPTIONS

Reservoir #1 is located on 7th Street (SW 1/4 of Section 25, T1N, R3E). This facility is an underground concrete reservoir providing service to pressure zones IV & V. This facility was constructed in 1977 and is in excellent condition.

Reservoir #2 is located at Stark Street (SW 1/4 of Section 35, T1N, R3E). This one million gallon reservoir/standpipe was constructed in 1975 and primarily provides service to pressure zone I. This facility, like the other reservoirs in the system, can be used by other pressure zones through a series of pressure reducing valves. This above ground steel tank is in excellent condition and is

expected to provide a continuing level of service requiring replacement only following the facility's useful life.

Reservoir #3 is a two million gallon above ground steel tank, and is located in Columbia Park adjacent to the high school (NW 1/4 Section 35, T1N, R3E). This reservoir was constructed in 1980, is in excellent condition, and is expected to provide service to the community over its useful life. It serves zones II, III, IV, & V.

Reservoir #4 is located outside of the Troutdale City limits on Strebin Road (NE 1/4 of Section 12, T1S, R3E). This reservoir primarily serves pressure zone II, but like the others, can feed lower level pressure zones as well. This reservoir was constructed in 1982, and is in excellent condition. This facility will serve the City throughout its useful life.

.240 DISTRIBUTION

The City's distribution system is composed primarily of six inch and larger waterlines. The exhibit "Water Distribution System Replacement Cost Analysis" provides a detailed inventory together with associated replacement costs.

The City has, over the past few years, replaced all substandard distribution facilities. The overall system is relatively new and should provide a continuing service to the community well past our time of build out.

A distribution system model has been prepared and is regularly utilized by the City to track distribution system needs and improvements. This is a dynamic model.... system flow analysis is readily obtainable to meet planning or engineering needs. Modeled analyses indicate that the existing pipe network provides adequate level of service to all but a few recently annexed portions of the community. Additional line extensions and looping will be provided to serve these areas in the near future. The pressure zones (hydraulic grade lines) are shown in cross-section on the exhibit "Supply System Cross-Section."

.250 SUPPORT FACILITIES AND SERVICES

The City's water system is maintained and operated

by City personnel. These personnel are certified and knowledgeable of the system. A shop facility provides for the routine repair and maintenance of all water supply and distribution facilities and is equipped accordingly.

The City installs all domestic water meters and maintains meter testing equipment and repair facilities to ensure the on-going accurate calibration of the customer's meter.

.260 DEFICIENCIES

The City's water system contains no system wide general deficiencies. Recently annexed portions of the City have not yet been provided service, but plans to accommodate that area's needs are underway. The construction of Well #7 will provide an additional layer of protective redundancy and enhance zone independence. The City has removed all lead jointed pipe from its distribution system and reacts quickly to the correction of any deficiencies or potential deficiencies discovered. The City's well water supply requires an enhanced standard of aquifer and production monitoring. An annual program of equipment acquisition and installation to meet this goal brings two wells to this monitoring standard each year.

2.300 SANITARY SEWERAGE COLLECTION AND TREATMENT

.310 GENERAL

The City maintains and operates a wastewater collection system containing approximately 38 miles of sewerlines, trunklines and interceptors. Six pump stations serve as integral portion of that collection system. A wastewater treatment plant with an average daily capacity of 1.6 million gallons meets the on-going needs of the City with an adequate excess capacity to meet the demands of all pre-paid wastewater system reserves.

The table "Wastewater Treatment and Collection Facility Replacement Cost Analysis" depicts the current system inventory together with the 1989 replacement cost(s). These facilities are operated from the budgetary units established as sewer and as sewer improvement funds. A ten year budget summary both in current and in constant dollars is included in the table "Sewer & Sewer Improvement Fund." The graph entitled "Wastewater Flow History" generally depicts the flow history through the facility. Additional analysis of historical flow data is required to adjust for metering errors.

Over the past six years, the City has embarked on a phased renewal and replacement program for its treatment facility. This program has also addressed future capacity needs for specific treatment plant "modules." A wastewater treatment plant expansion analysis is currently underway and is expected to be completed by June 30, 1989. A Wastewater Treatment Plant Master Plan has been budgeted for the following fiscal year.

.320 COLLECTION SYSTEM

.321 GENERAL

The map "Sewer System" graphically locates all the collection system components including the collector, trunk and interceptor sewerlines, pump stations, manholes and other associated appurtenances. This system has been reduced to a computer model capable of dynamic analysis and subsequent use as an engineering and planning tool. This model generally indicates adequate collection system capacity to meet the basin by basin needs at optimum growth and development. A capacity analysis generated via this model is

WASTE WATER TREATMENT & COLLECTION FACILITY(S)
REPLACEMENT COST ANALYSIS

COLLECTION SYSTEM

A) Gravity Sewer Lines		Linear Ft	Cost/Foot *	Total Cost
6"		2,310	$32.51	$75,098.10
8"		115,050	$37.36	$4,298,268.00
10"		21,165	$40.73	$862,050.45
12"		8,500	$44.16	$375,360.00
15"		9,595	$48.11	$461,615.45
21"		2,080	$59.93	$124,654.40
	TOTAL	158,700	$43.80	$6,197,046.40

B) Force Mains		Linear Ft	Cost/Foot **	Total Cost
4"		2,390	$20.92	$49,998.80
5"		2,470	$22.70	$56,069.00
6"		940	$24.08	$22,635.20
8"		8,835	$27.00	$238,545.00
	TOTAL	14,635	$23.68	$367,248.00

C) Manholes	Quantity	Cost/Each	Total Cost
0 - 4 Ft	40	$845.00	$33,800.00
4 - 8 Ft	250	$1,040.00	$260,000.00
8 - 12 Ft	385	$1,610.00	$619,850.00
12 - 16 Ft	45	$2,185.00	$98,325.00
16 - 20 Ft	6	$2,755.00	$16,530.00
TOTAL	726		$1,028,505.00

D) Pump Stations		Quantity	Cost/Unit	Total Cost
Portland/Troutdale Airport	(Improvements)		$300,000.00	$300,000.00
	(Land)	0.26 Ac.	$36,000.00	$9,421.20
Frontage Road #1	(Improvements)		$35,000.00	$35,000.00
	(Land)	0.01 Ac.	$36,000.00	$370.80
Frontage Road #2	(Improvements)		$50,000.00	$50,000.00
	(Land)	0.03 Ac.	$36,000.00	$1,080.00
West Columbia	(Improvements)		$60,000.00	$60,000.00
	(Land)	0.03 Ac.	$36,000.00	$990.00
Beaver Creek	(Improvements)		$60,000.00	$60,000.00
	(Land)	0.14 Ac.	$36,000.00	$5,040.00
19th Street	(Improvements)		$6,000.00	$6,000.00
	(Land)	0.00 Ac.***	$36,000.00	$0.00
	TOTAL (LAND & FACILITY)	0.47 Ac.		$527,902.00

TOTAL/COLLECTION SYSTEM $8,120,701.40

WASTE WATER TREATMENT & COLLECTION FACILITY(S)
REPLACEMENT COST ANALYSIS

TREATMENT SYSTEM

		Quantity	Cost/Unit	Total Cost
A)	Treatment Plant & Appertanances (Improvements)	1	$4,700,000.00	$4,700,000.00
	1.6 MGD Land	16.96 Acres	$36,000.00	$610,560.00
	TOTAL			$5,310,560.00

EQUIPMENT/SUPPLIES

		Total Cost
A)	Rolling Stock	$193,000.00
B)	Plant, Office & Laboratory	$26,895.00
C)	Field, Shop & Grounds	$51,598.00
D)	Supplies	$6,959.00
	TOTAL	$278,452.00
	TOTAL TREATMENT SYSTEM	$5,589,012.00
	TOTAL FACILITY REPLACEMENT COST	$13,709,713.40

* Based on an average trench depth of 8Ft.
** Based on an average trench depth of 4 Ft.
*** 19th Street Pump Station exists within R.O.W. boundaries

CITY OF TROUTDALE

05-Mar-90

SEWER & SEWER IMPROVEMENT FUND (Current Dollars)

RESOURCES/EXPENDITURES	1990-1991 (Budget Est'n)	1989-1990 (Budget)	1988-1989	1987-1988	1986-1987	1985-1986	1984-1985	1983-1984	1982-1983	1981-1982	1980-1981	1979-1980	1978-1979
RESOURCES													
SEWER FUND													
Service Charge	$0	$500,946	$396,059	$379,500	$388,394	$354,568	$355,291	$236,877	$206,312	$167,871	$143,324	$108,983	$75,132
Improvement Changes	$0	$0	$0	$0	$0	$0	$39,455	$42,548	$72,145	$210,409	$218,475	$275,875	$1,222,202
Installation Changes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$35,000
Interest	$0	$0	$213	$3,000	$5,511	$7,263	$5,679	$10,139	$7,011	$9,622	$4,820	$10,442	$14,587
Interfund Loan,Transfers,Misc	$0	$3,000	$33,898	$7,183	$22,165	$3,914	$11,216	$8,806	$1,716	$2,050	$8,252	$6,176	$1,886
Beginning Retained	$0	$43,273	$53,211	$114,252	$120,086	$135,155	$89,830	$162,893	$135,384	$364,310	$236,493	$438,557	$344,017
Audit Adjust	$0	$0	$4,174	$0	$0	$0	$0	$36,875	$0	($382,294)	$0	$0	$0
TOTAL	$0	$547,219	$487,555	$504,735	$536,156	$500,900	$501,471	$498,138	$422,568	$371,968	$611,364	$840,033	$1,692,824
SEWER IMPROVEMENT FUND													
System Development Changes	$0	$35,000	$94,686	$40,200	$18,988	$49,475							
Interest & Misc	$0	$2,000	$13,198	$6,550	$2,252	$919							
Transfers & Inerfund Loans	$0	$83,110	$0	$20,000	$20,000	$60,000							
Beginning Retained	$0	$129,010	$143,456	$88,501	$57,862	$0							
TOTAL	$0	$249,120	$251,340	$155,251	$99,102	$110,394							
RESOURCE TOTAL	$0	$796,339	$738,895	$659,986	$635,258	$611,294	$501,471	$498,138	$422,568	$371,968	$611,364	$840,033	$1,692,824
EXPENDITURES													
SEWER FUND													
Personnel Services	$0	$124,456	$113,048	$96,367	$77,071	$73,693	$77,221	$160,967	$106,878	$133,217	$110,196	$110,841	$86,521
Materials & Service	$0	$312,929	$305,940	$315,967	$302,393	$263,070	$214,922	$70,871	$71,512	$55,124	$68,735	$55,078	$34,726
Capital Outlay	$0	$25,450	$25,294	$19,198	$22,440	$24,051	$55,134	$97,256	$42,574	$5,178	$23,978	$309,751	$1,019,203
Debt(Principal)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Debt(Interest)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Tranfers & Interfund Loans	$0	$46,111	$0	$20,000	$20,000	$20,000	$19,039	$79,214	$38,711	$43,065	$44,145	$127,870	$113,830
Contingency	$0	$10,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Year End Balance	$0	$28,273	$43,273	$53,211	$114,252	$120,086	$135,155	$89,830	$162,893	$135,384	$364,310	$236,493	$438,557
TOTAL	$0	$547,219	$487,555	$504,735	$536,156	$500,900	$501,471	$498,138	$422,568	$371,968	$611,364	$840,033	$1,692,824
SEWER IMPROVEMENT FUND													
Capital Outlay & Contingency	$0	$248,111	$59,220	$11,795	$10,601	$52,532							
Debt(Principal)	$0	$0	$0	$0	$0	$0							
Debt(Interest)	$0	$0	$0	$0	$0	$0							
Tranfers & Interfund Loan(s)	$0	$0	$63,110	$0	$0	$0							
Year End Balance	$0	$1,009	$129,010	$143,456	$88,501	$57,862							
TOTAL	$0	$249,120	$251,340	$155,251	$99,102	$110,394							
EXPENDITURE TOTAL	$0	$796,339	$738,895	$659,986	$635,258	$611,294	$501,471	$498,138	$422,568	$371,968	$611,364	$840,033	$1,692,824
POPULATION	7620	7,375 Est	7,255	7,115	7,095	6,890	6,850	6,640	6,545	6,235	5,900	5,150	4,100
Cost/Capita *	$0	$74	$67	$71	$76	$73	$73	$75	$65	$60	$103	$163	$413
User Fee/Capita *	$0	$68	$55	$53	$55	$51	$52	$36	$32	$27	$24	$21	$18
Annual Flow in 1000's	0	290,000 Est	269,680	315,120	302,410	288,050	241,287	223,804	205,656	201,409	223,074	197,361	157,532
Cost/1000 Gallons	$0.00	$1.89	$1.81	$1.60	$1.77	$1.74	$2.08	$2.23	$2.05	$1.85	$2.74	$4.26	$10.75
User Fee/1000 Gallons	$0.00	$1.73	$1.47	$1.20	$1.28	$1.23	$1.47	$1.06	$1.00	$0.83	$0.64	$0.55	$0.48

* Sewer fund only

CITY OF TROUTDALE

SEWER & SEWER IMPROVEMENT FUND
Adjusted for Constant Dollars

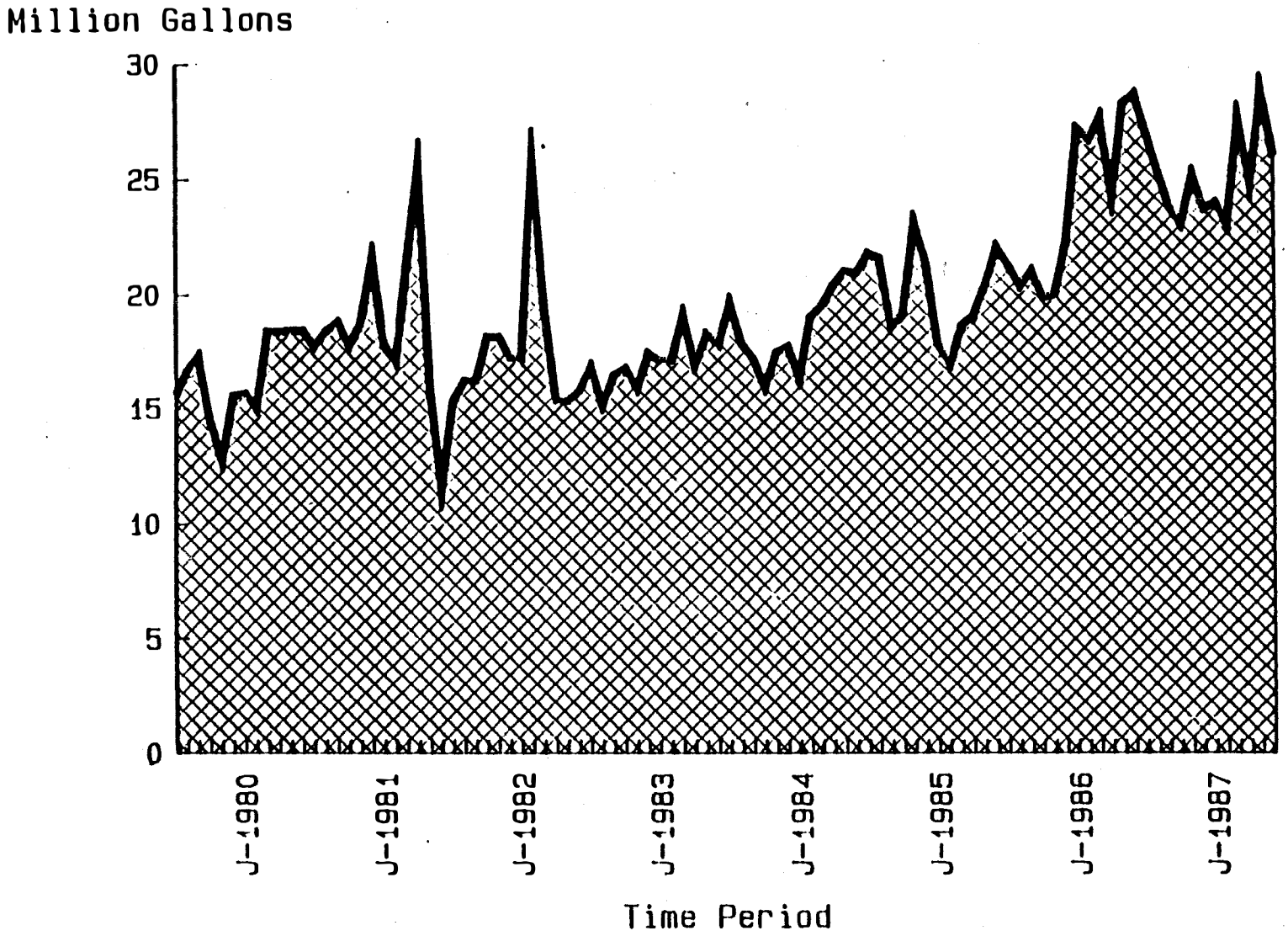
21-Mar-89

RESOURCES/EXPENDITURES	1989-1990 (Prop Budget)	1988-1989 (Budget Est)	1987-1988	1986-1987	1985-1986	1984-1985	1983-1984	1982-1983	1981-1982	1980-1981	1979-1980	1978-1979
CONSUMER PRICE INDEX	345 Estm	335.8	336.6	316.8	312.4	301	290.1	287	278.2	255.4	225.4	198.4
SEWER FUND												
Service Charge	$485,187	$407,813	$388,971	$422,967	$391,568	$407,227	$281,705	$248,006	$208,179	$193,605	$166,811	$130,648
Improvement Charges	$0	$0	$0	$0	$0	$45,223	$56,660	$86,725	$260,931	$295,121	$422,258	$2,125,301
Installation Charges	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$60,862
Interest	$0	$514	$3,895	$6,002	$8,021	$6,509	$12,058	$8,428	$11,932	$6,511	$15,983	$25,365
Miscellaneous	$3,000	$4,315	$7,362	$24,138	$4,322	$12,856	$10,472	$2,063	$2,542	$11,147	$9,453	$3,280
Beginning Retained	$0	$54,669	$117,103	$130,775	$149,259	$102,961	$237,573	$162,744	($22,302)	$319,460	$671,261	$598,215
TOTAL	$488,187	$467,311	$517,331	$583,882	$553,171	$574,776	$592,408	$507,965	$461,283	$825,844	$1,285,765	$2,943,671
SEWER IMPROVEMENT FUND												
System Development Charges	$35,000	$104,795	$41,203	$20,678	$54,638							
Interest	$2,000	$7,192	$6,713	$2,452	$1,015							
Transfers In	$20,000	$0	$20,499	$21,780	$66,261							
Beginning Retained	$180,000	$147,386	$90,710	$63,013	$0							
TOTAL	$237,000	$259,373	$159,125	$107,924	$121,914							
RESOURCE TOTAL	$725,187	$726,683	$676,456	$691,806	$675,085	$574,776	$592,408	$507,965	$461,283	$825,844	$1,285,765	$2,943,671
EXPENDITURES												
SEWER FUND												
Personnel Services	$119,808	$119,219	$98,772	$83,931	$81,383	$88,509	$191,429	$128,477	$165,204	$148,855	$169,655	$150,452
Materials & Service	$312,929	$333,708	$323,852	$329,311	$290,522	$246,339	$84,283	$85,964	$68,360	$92,849	$84,303	$60,385
Capital Outlay	$25,450	$14,384	$19,669	$24,438	$36,561	$63,193	$115,661	$51,178	$6,421	$32,390	$474,109	$1,772,298
Debt(Principal)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Debt(Interest)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Tranfers	$20,000	$0	$20,499	$21,780	$22,087	$21,822	$94,205	$46,534	$53,406	$59,632	$195,719	$197,923
Contingency	$10,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Year End Balance	$0	$0	$54,539	$124,422	$132,617	$154,912	$106,830	$195,812	$167,892	$492,118	$361,979	$762,612
TOTAL	$488,187	$467,311	$517,331	$583,882	$553,171	$574,776	$592,408	$507,965	$461,283	$825,844	$1,285,765	$2,943,671
SEWER IMPROVEMENT FUND												
Capital Outlay	$237,000	$74,441	$12,089	$11,545	$58,014							
Debt(Principal)	$0	$0	$0	$0	$0							
Debt(Interest)	$0	$0	$0	$0	$0							
Tranfers	$0	$0	$0	$0	$0							
Year End Balance	$0	$184,932	$147,036	$96,379	$63,900							
TOTAL	$237,000	$259,373	$159,125	$107,924	$121,914							
EXPENDITURE TOTAL	$725,187	$726,683	$676,456	$691,806	$675,085	$574,776	$592,408	$507,965	$461,283	$825,844	$1,285,765	$2,943,671
POPULATION	7,425 Estm	7,255	7,115	7,095	6,890	6,850	6,640	6,545	6,235	5,908	5,150	4,100
Cost/Capita A	$65.75	$64.41	$72.71	$82.29	$80.29	$83.91	$89.22	$77.61	$73.98	$139.78	$249.66	$717.97
User Fee/Capita A	$65.35	$56.21	$54.67	$59.61	$56.83	$59.45	$42.43	$37.89	$33.39	$32.77	$32.39	$31.87

A Sewer fund only

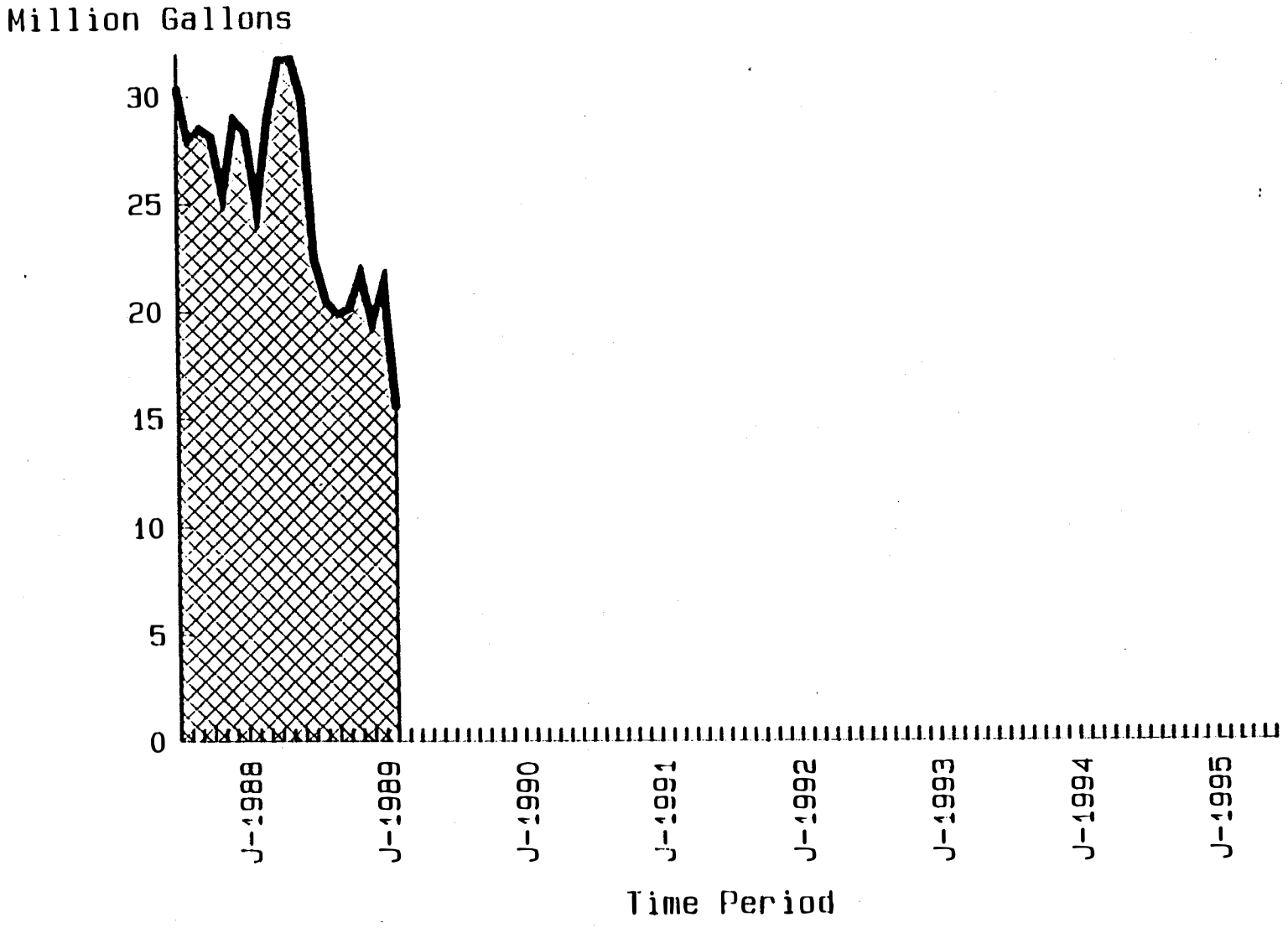
Wastewater Flow History

City of Troutdale



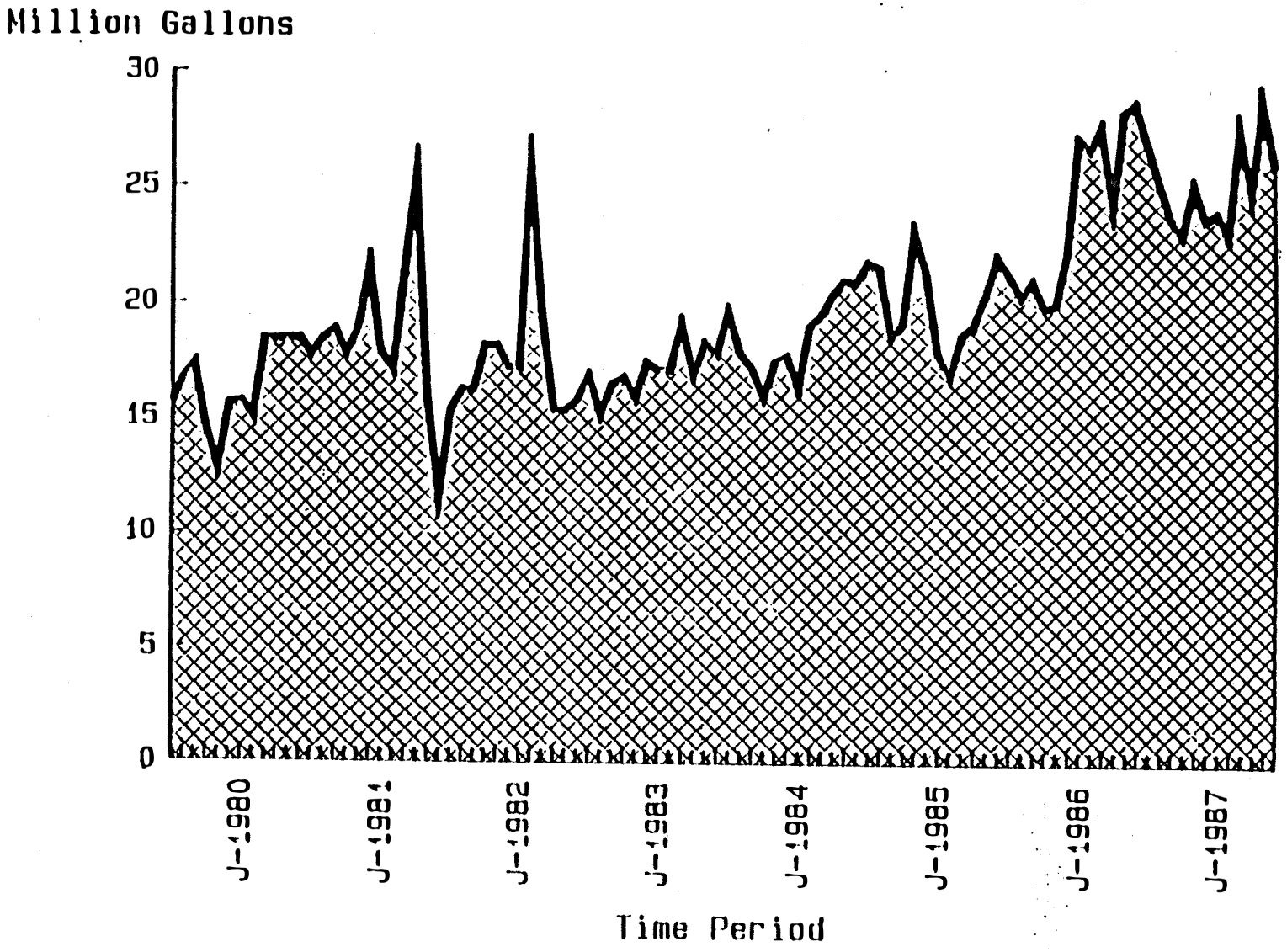
Wastewater Flow History

City of Troutdale



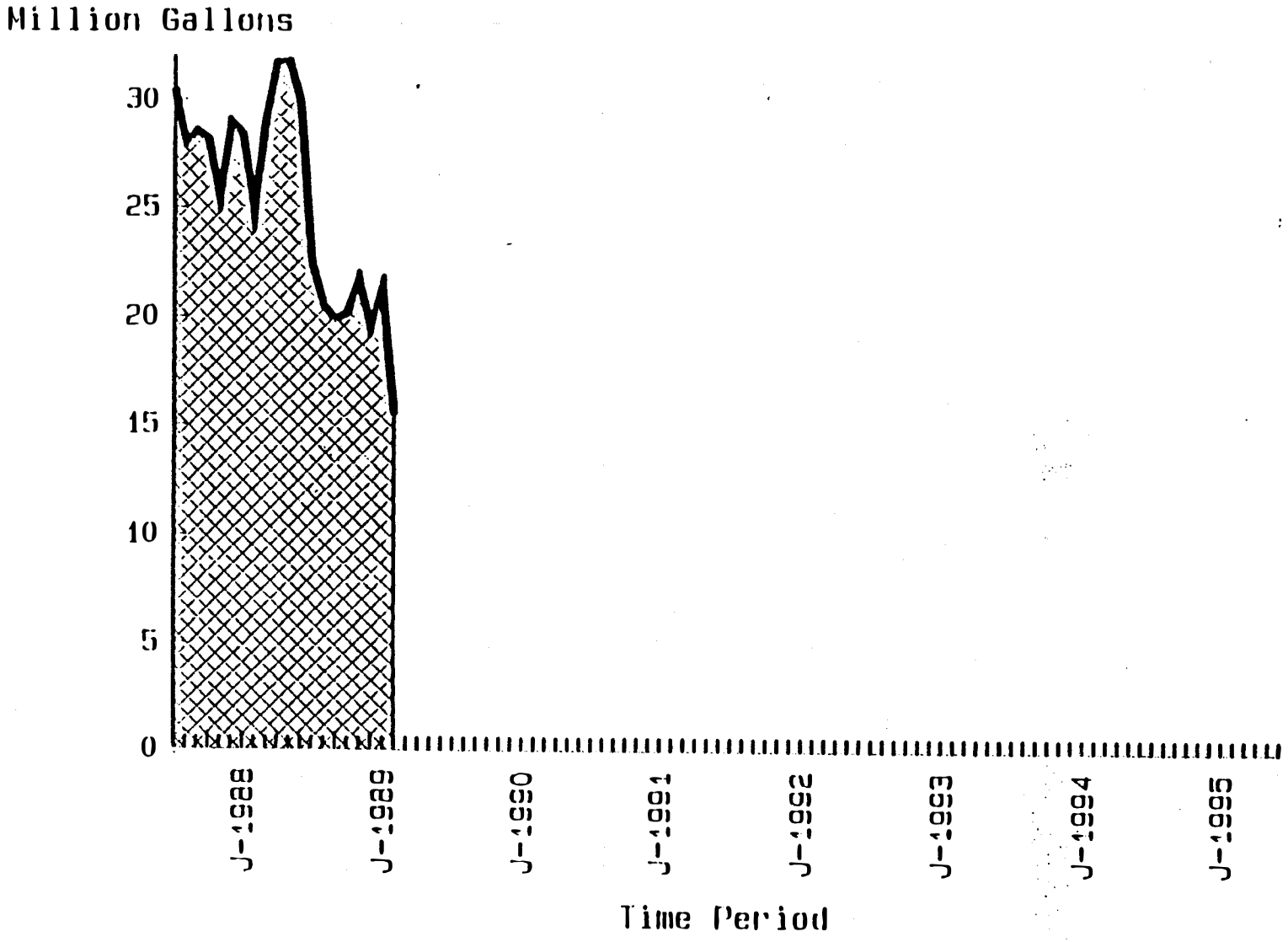
Wastewater Flow History

City of Troutdale



Wastewater Flow History

City of Troutdale



included in the table "Collector System Flow Analysis."

.322 COLLECTOR, TRUNK & INTERCEPTION LINES

The City's basic collection system is composed of approximately 38 miles of various sized and types of sewerlines. The map "Sewer System" depicts this pipe network together with the associated pump stations and treatment facility.

A major component in analyzing a wastewater collection system is its "water tightness." The City is currently involved in an infiltration / inflow analysis program which is expected to be completed by the end of the 1989 calendar year. However, preliminary results of that analysis suggest that very little inflow effects system or treatment capacity. Some amount, well within acceptable limits, of infiltration may be present in the winter during extremely high ground water conditions. Four graphs entitled "Wastewater Wet/Dry Day Influent Profile" depict the seasonal comparison of dry to wet day of flows in the system. Only the winter period indicates a daily average of increased flows as a result of infiltration or rain induced infiltration.

The City recognizes the value of a "tight" system and has purchased specialized monitoring and measuring equipment to more accurately locate sources of inflow and infiltration. This equipment includes an on-site weather station, portable flow measuring equipment and portable flow stream quality sampling equipment.

An annual budgeted program, for manhole rain tight lid replacement and water proof grouting is underway. It is expected that this four year program will reduce inflow to negligible limits and will address a major component on inflow and rain induced infiltration.

There are no major capacity collection system deficiencies and the current system inventory should serve the City throughout its expected and customary useful life.

.323 PUMP STATIONS

The table entitled "Pump Station Summary" depicts the capacity and other applicable information for each of City's wastewater pump stations. These

COLLECTION SYSTEM FLOW ANALYSIS

Basin	MH	TO MH	Size (in)	Length (ft)	Slope ft/ft	Capacity CFS	Capacity MGD	Peak Flow Analysis 181 GPCD PE	Peak Flow Analysis 181 GPCD ERU	Commonly Accepted Design Criteria 250 GPCD PE	Commonly Accepted Design Criteria 250 GPCD ERU
x	1x	2x	15	270	.0074074074	5.57	3.60	19887	5764	14398	4173
	2x	3x	15	260	.0346153846	12.04	7.78	42990	12461	31125	9022
	3x	5x	15	150	.2133333333	29.88	19.32	106725	30935	77269	22397
	5x	6x	15	110	.00909	6.17	3.99	22030	6386	15950	4623
	6x	7x	21	30	.001	5.00	3.23	17844	5172	12919	3745
	7x	8x	21	270	.001	5.00	3.23	17844	5172	12919	3745
	8x	9x	21	370	.001	5.00	3.23	17844	5172	12919	3745
	10x	4x	21	250	.004	9.99	6.46	35688	10344	25838	7489

Note: PE = Population Equivalent
ERU = Equivalent Residential Units

Basin	MH	TO MH	Size (in)	Length (ft)	Slope ft/ft	Capacity CFS	Capacity MGD	Peak Flow Analysis 181 GPCD PE	Peak Flow Analysis 181 GPCD ERU	Commonly Accepted Design Criteria 250 GPCD PE	Commonly Accepted Design Criteria 250 GPCD ERU
A	3A	1A	12	575	.0086956522	3.33	2.15	11889	3446	8608	2495
	4A	3A	12	390	.0076923077	3.13	2.02	11182	3241	8096	2347
	5A	4A	15	420	.0023809524	3.16	2.04	11275	3268	8163	2366
	6A	5A	15	125	.008	5.79	3.74	20667	5990	14963	4337
	7A	6A	15	225	.0015	2.51	1.62	8949	2594	6479	1878
	8A	7A	15	365	.0027397260	3.39	2.19	12095	3506	8756	2538
	9A	8A	10	80	.1	6.89	4.46	24620	7136	17825	5167
	10A	9A	10	400	.1025	6.98	4.51	24926	7225	18046	5231
	11A	10A	10	375	.064	5.52	3.56	19696	5709	14260	4133
	12A	11A	10	225	.0533333333	5.03	3.25	17980	5212	13017	3773
	13A	12A	10	280	.0892857143	6.51	4.21	23264	6743	16843	4882
	14A	13A	10	400	.0975	6.81	4.40	24310	7046	17601	5102
	15A	14A	10	490	.0591836735	5.30	3.43	18940	5490	13713	3975
	16A	15A	10	135	.0222222222	3.25	2.10	11606	3364	8403	2436
	17A	16A	10	490	.0489795918	4.82	3.12	17230	4994	12475	3616
	18A	17A	10	450	.0155555556	2.72	1.76	9710	2815	7030	2038
	19A	18A	10	390	.0102564103	2.21	1.43	7885	2285	5709	1655
	20A	19A	10	260	.0115384615	2.34	1.51	8363	2424	6055	1755
	21A	20A	10	420	.0071428571	1.84	1.19	6580	1907	4764	1381
	22A	21A	10	420	.0095238095	2.13	1.38	7598	2202	5501	1594
	23A	8A	12	500	.004	2.26	1.46	8064	2337	5838	1692
	24A	23A	12	470	.0148936170	4.36	2.82	15560	4510	11265	3265
	25A	24A	12	435	.0022988506	1.71	1.11	6113	1772	4426	1283
	26A	25A	10	360	.0083333333	1.99	1.29	7107	2060	5146	1491
	27A	26A	10	400	.0025	1.09	.70	3893	1128	2818	817
	28A	27A	10	400	.01	2.18	1.41	7786	2257	5637	1634
	29A	28A	10	380	.0105263158	2.24	1.45	7988	2315	5783	1676
	30A	29A	10	380	.0028	1.15	.75	4120	1194	2983	865

Note: PE = Population Equivalent
ERU = Equivalent Residential Units

Basin	MH	TO MH	Size (in)	Length (ft)	Slope ft/ft	Capacity CFS	Capacity MGD	Peak Flow Analysis 181 GPCD PE	Peak Flow Analysis 181 GPCD ERU	Commonly Accepted Design Criteria 250 GPCD PE	Commonly Accepted Design Criteria 250 GPCD ERU
B	7B	1B	8	1160	.1112068966	4.04	2.61	14411	4177	10433	3024
	10B	7B	8	635	.0566929134	2.88	1.86	10289	2982	7449	2159
	12B	10B	8	800	.02375	1.86	1.21	6660	1930	4822	1398
	13B	12B	8	445	.0382022472	2.36	1.53	8446	2448	6115	1772
	15B	13B	10	800	.0075	1.89	1.22	6742	1954	4882	1415
	16B	15B	10	450	.0088888889	2.06	1.33	7340	2128	5314	1540
	17B	16B	10	420	.0047619048	1.50	.97	5373	1557	3890	1127
	19B	17B	10	350	.0057142857	1.65	1.07	5885	1706	4261	1235
	20B	19B	10	100	.01	2.18	1.41	7786	2257	5637	1634
	21B	20B	10	435	.0022988506	1.05	.68	3733	1082	2703	783
	22B	21B	10	430	.0023255814	1.05	.68	3755	1088	2718	788
	23B	22B	10	60	.0166666667	2.81	1.82	10051	2913	7277	2109
	24B	23B	10	435	.0022988506	1.05	.68	3733	1082	2703	783
	25B	24B	10	500	.016	2.76	1.78	9848	2854	7130	2067
	26B	25B	10	410	.0048780488	1.52	.98	5438	1576	3937	1141
	27B	26B	10	150	.0028	1.15	.75	4120	1194	2983	865
	28B	27B	10	250	.004	1.38	.89	4924	1427	3565	1033
	29B	28B	10	500	.004	1.38	.89	4924	1427	3565	1033
	30B	29B	10	200	.005	1.54	1.00	5505	1596	3986	1155
	31B	30B	10	350	.0028571429	1.17	.75	4162	1206	3013	873
	34B	31B	10	420	.0047619048	1.50	.97	5373	1557	3890	1127
	36B	34B	10	500	.004	1.38	.89	4924	1427	3565	1033
	37B	36B	10	500	.004	1.38	.89	4924	1427	3565	1033

ERU = Equivalent Residential Units

Note: PE = Population Equivalent

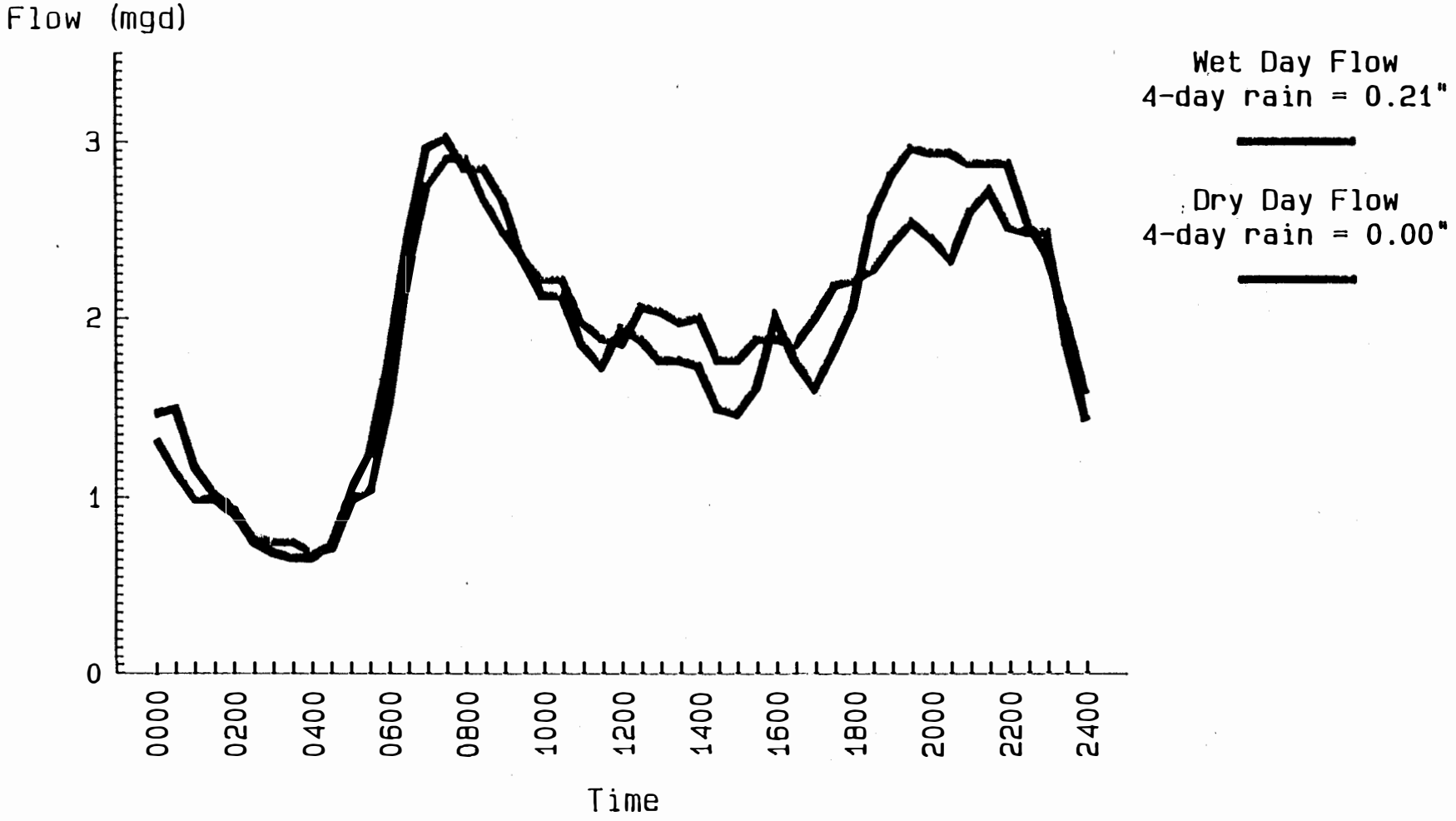
Basin	MH	TO	MH	Size (in)	Length (ft)	Slope ft/ft	Capacity CFS	Capacity MGD	Peak Flow Analysis 181 GPCD PE	Peak Flow Analysis 181 GPCD ERU	Commonly Accepted Design Criteria 250 GPCD PE	Commonly Accepted Design Criteria 250 GPCD ERU
C	2C		1C	21	370	.0027027027	8.21	5.31	29335	8503	21239	6156
	3C		2C	21	400	.005	11.17	7.22	39900	11565	28888	8373
	4C		3C	21	300	.0033333333	9.12	5.90	32578	9443	23587	6837
	5C		4C	21	150	.0066666667	12.90	8.34	46073	13354	33357	9669
	6C		5C	21	200	.015	19.35	12.51	69109	20032	50035	14503
	7C		6C	21	260	.0115384615	16.97	10.97	60612	17569	43883	12720
	8C		7C	12	100	.09	10.71	6.92	38249	11087	27692	8027
	9C		8C	12	60	.1666666667	14.57	9.42	52050	15087	37684	10923
	10C		9C	12	150	.62	28.11	18.17	100391	29099	72683	21068
	11C		10C	15	140	.0285714286	10.94	7.07	39057	11321	28277	8196
	12C		11C	15	110	.0015	2.51	1.62	8949	2594	6479	1878
	13C		12C	15	450	.0222222222	9.64	6.23	34445	9984	24938	7229
	14C		13C	15	100	.01	6.47	4.18	23107	6698	16729	4849
	16C		14C	15	280	.0071428571	5.47	3.53	19529	5660	14139	4098
	18C		16C	15	600	.0016666667	2.64	1.71	9433	2734	6830	1980
	20C		18C	15	385	.0025974026	3.30	2.13	11776	3413	8526	2471
	21C		20C	15	350	.0028571429	3.46	2.24	12351	3580	8942	2592
	27C		21C	15	1140	.0043859649	4.28	2.77	15303	4436	11079	3211
	40C		27C	15	2500	.0092	6.21	4.01	22163	6424	16046	4651
	41C		40C	15	3920	.0073979592	5.56	3.60	19874	5761	14389	4171
	43C		41C	12	470	.0085106383	3.29	2.13	11762	3409	8516	2468
	45C		43C	12	740	.0013513514	1.31	.85	4687	1359	3393	984
	46C		45C	12	1060	.0075471698	3.10	2.00	11076	3210	8019	2324
	46C		45C	35.7	360	.0055555556	2.66	1.72	9503	2755	6880	1994
	48C		46C	12	375	.0026666667	1.84	1.19	6584	1908	4767	1382
	51C		48C	12	1065	.0018779343	1.55	1.00	5525	1601	4000	1159
	57C		7C	15	625	.0024	3.17	2.05	11320	3281	8196	2376
	58C		57C	16	200	.0025	3.24	2.09	11553	3349	8365	2425
	59C		58C	12	575	.0052173913	2.58	1.67	9209	2669	6668	1933
	60C		59C	8	1850	.07	3.20	2.07	11433	3314	8278	2399

Note: PE = Population Equivalent
ERU = Equivalent Residential Units

Wastewater Wet/Dry Day Influent Profile

City of Troutdale, Oregon

Department of Community Services

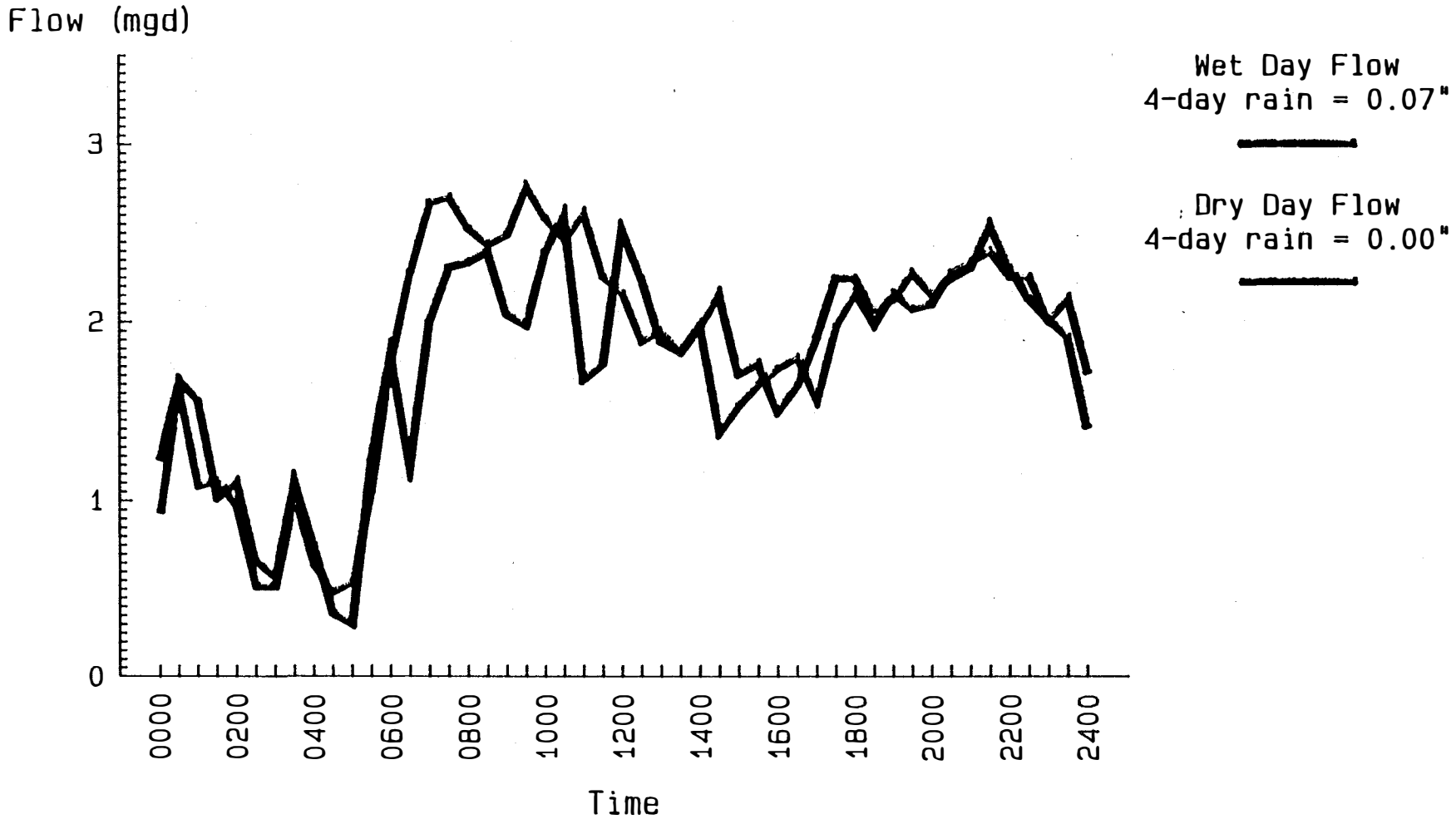


1. Spring flow profile / mid-week
2. Dry day....Apr 13, 1988. Rainfall = 0.00"
3. Wet day....Apr 20, 1988. Rainfall = 0.21"

Wastewater Wet/Dry Day Influent Profile

City of Troutdale, Oregon

Department of Community Services

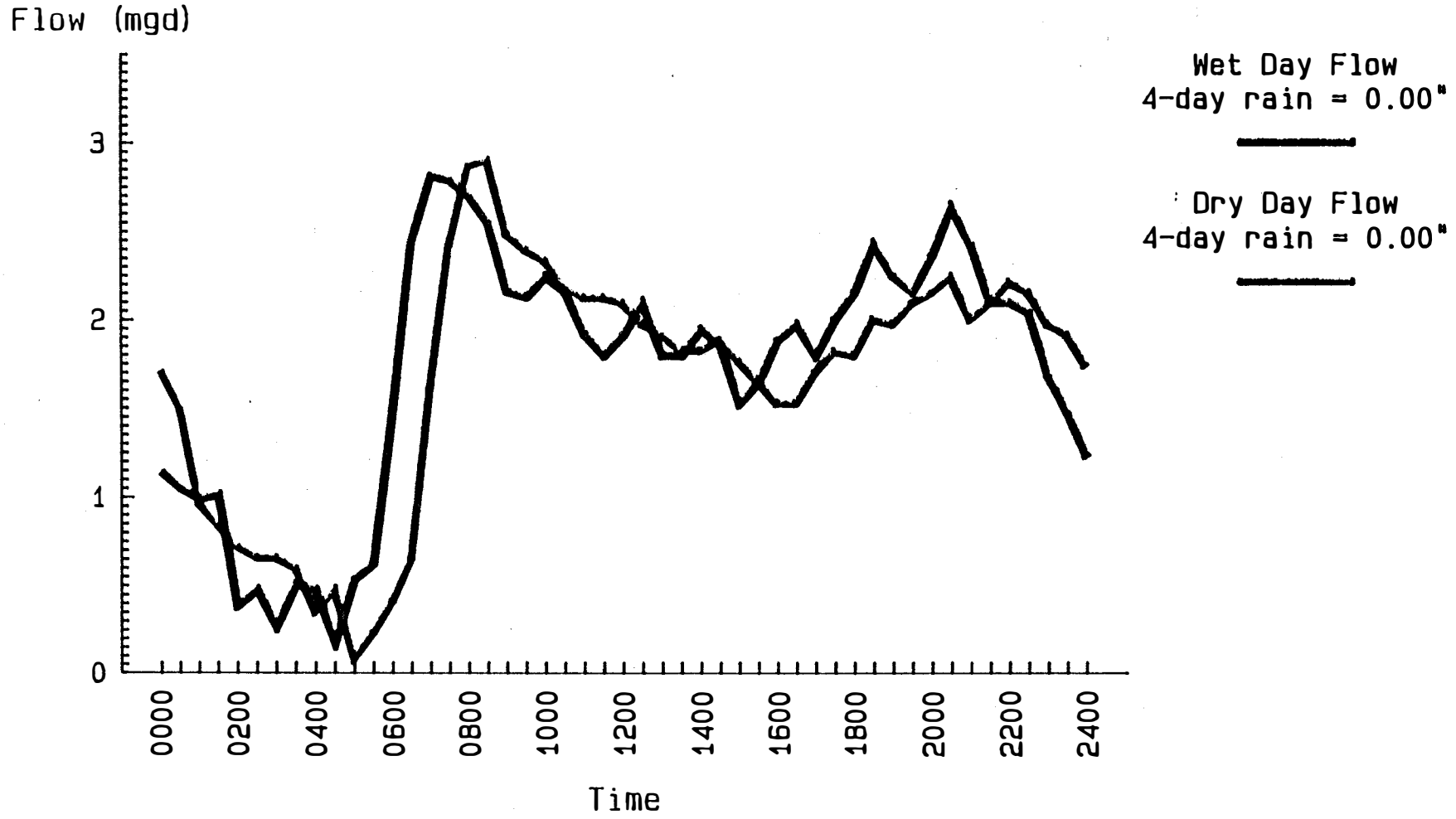


1. Summer flow profile / mid-week
2. Dry day....Jul 01, 1987. Rainfall = 0.00"
3. Wet day....Jul 22, 1988. Rainfall = 0.02"

Wastewater Wet/Dry Day Influent Profile

City of Troutdale, Oregon

Department of Community Services

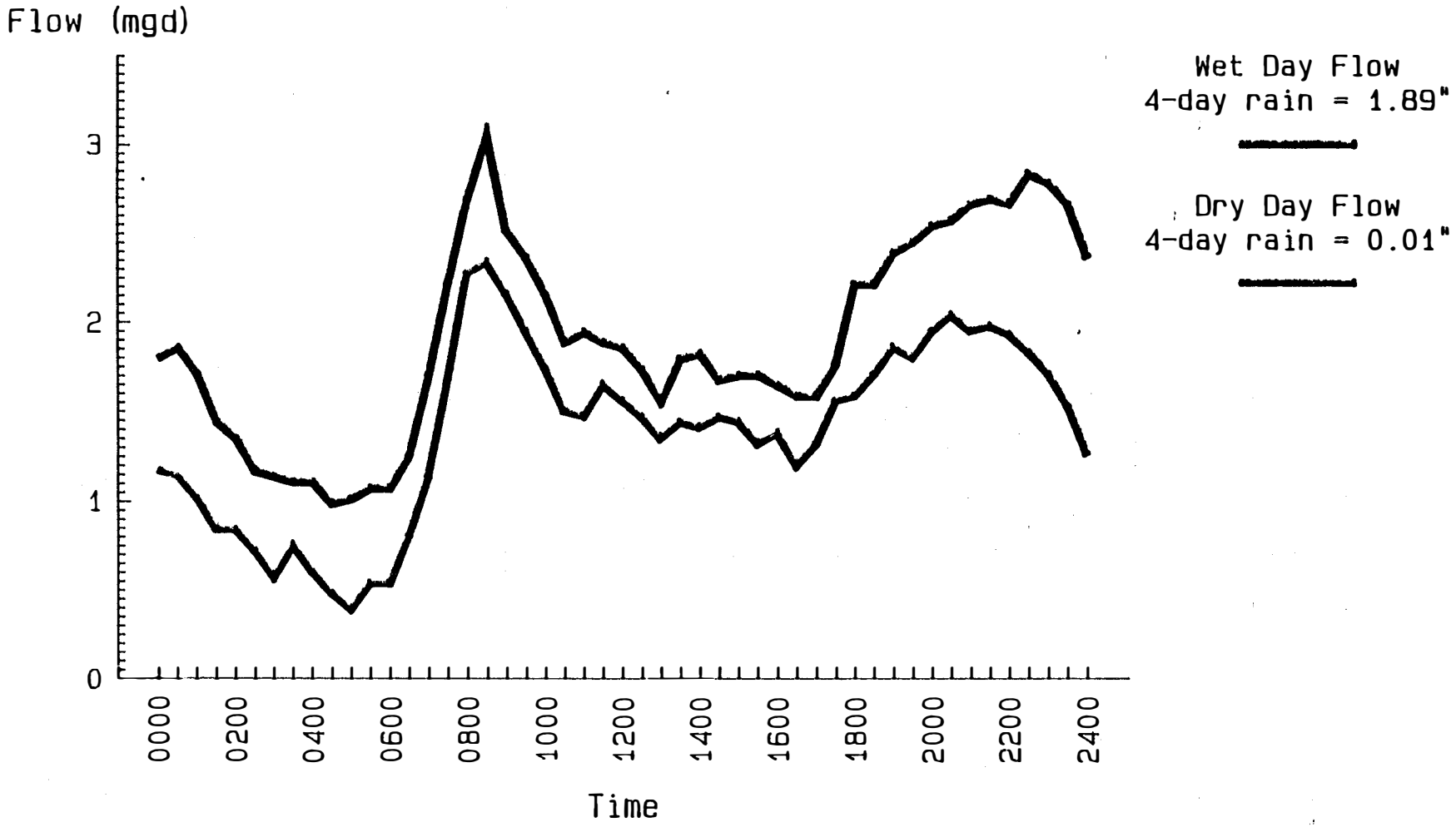


1. Fall flow profile / mid-week
2. Dry day....Oct 14, 1987. Rainfall = 0.00"
3. Wet day....Oct 28, 1987. Rainfall = 0.00"

Wastewater Wet/Dry Day Influent Profile

City of Troutdale, Oregon

Department of Community Services



1. Winter flow profile / mid-week
2. Dry day....Jan 06, 1988. Rainfall = 0.00"
3. Wet day....Jan 13, 1988. Rainfall = 0.38"

PUMP STATION SUMMARY

PUMP STATION LOCATION	PEAK FLOW MGD	PEAK FLOW POP. EQUIV.	PEAK FLOW EQUIV. RESIDENTIAL UNITS AT 181 GCPD	CAPACITY BASED UPON COMMONLY ACCEPTED DESIGN STANDARDS 250 GCPD	
				POP. EQUIV.	EQUIV. RESIDENTIAL UNITS
Portland Troutdale Airport	2.59	14,309	4,148	10,360	3,003
Husky	1.514	8,365	2,425	6,056	1,755
Frontage Road #1	1.15 ~~.54~~	2,983	865	2,160	626
West Columbia	.897	4,956	1,436	3,588	1,040
Beaver Creek	4.54	25,083	7,270	18,160	5,264
19th Street*	-	-	-	-	- 25

*No design data available.

facilities are located throughout the City and are depicted on the "Sewer System" map. Each of them is described as follows:

Pump Station #1 (SW 1/4, Section 23, T1N, R3E) was constructed in 1978 and contains an integral emergency power backup system. This facility is designed to serve the Port and northern industrial areas and is utilized as the final lift station to move wastewater from Basin "D" to the wastewater treatment plant. This pump station is contained in an above ground brick/concrete building and is in very good to excellent condition. The facility has adequate capacity to address the optimum growth needs of Basin "D" for typical industrial and domestic level demands. Except for required renewal and replacement expenditures no capacity upgrades or major modifications are planned for this pump station.

Pump Station #2 (NE 1/4, Section 26, T1N, R3E) services commercial properties along Frontage Road adjacent to I-84. This pump station discharges to Pump Station #3. Except for typical renewal and replacement and minor modifications, Pump Station #2 is expected to serve the drainage area for which it was designed through optimum development of those properties. This facility was installed in 1982.

Pump Station #3 (NE 1/4, Section 26, T1N, R3E) is being replaced with a new facility of adequate capacity to address development pressures along Frontage Road adjacent to I-84. This new facility will be completed by the end of the 1988-89 fiscal year.

Pump Station #4 (SE 1/4, Section 25, T1N, R3E) receives all the wastewater flow from basin "C". The facility was installed in 1975 and should provide an adequate level of service through the mid 1990's. A gravity system might be considered rather than the replacement of this facility when its useful life is complete.

Pump Station #5 (NE 1/4, Section 26, T1N, R3E) was installed in 1975, and received modification and upgrade in 1984. This facility services portions of Basin "B". This pump station is designed to accept an emergency generator which is kept at the treatment facility for this purpose. The general condition of this pump station is very good and its capacity should serve its drainage basin adequately.

Pump Station #6 (NW 1/4, Section 36, T1N, R3E) is a small lift station designed to service approximately twelve homes. This facility was installed in 1977 and operates effectively. This facility is reaching the end of its useful life and will be replaced in the next three to five years. This station serves a portion of Basin "B".

.330 TREATMENT SYSTEM

.331 GENERAL

The City's treatment facility is classified as an activated sludge facility. It has an average design capacity of 1.6 million gallons per day, and an average peak hydraulic capacity of 3.6 million gallons per day. The diagram entitled "Troutdale Sewage Treatment Plant Schematic" depicts the generalized process and components for the facility.

The City consistently meets all EPA and DEQ discharge requirements at its outfall with the Sandy River and complies with all specified regulations for the land disposal of sludge products.

An engineering study is currently underway to perform an upgrade analysis for this plant. It is expected that a major expansion to the facility will be needed prior to the year 1996. A phase II final design for that expanded facility has been budgeted for the fiscal year 1989-90.

.332 TREATMENT PLANT

The table entitled "Estimated Capacity of the City of Troutdale's Sewage Treatment Plant" presents the various components and their representative capacity. The preliminary treatment plant expansion analysis currently underway will refine these figures and make recommendation for potential improvements.

The general condition of existing structures and facilities is very good. the equipment, buildings and grounds have been well maintained and a satisfactorily preventative maintenance program has kept operational costs within acceptable limits.

The table entitled "Wastewater Effluent Quality

Analysis" depicts average annual test results for both the City's effluent discharge into the Sandy River and the land application of sludge products. The facility was originally constructed in 1968 and was expanded to its current capacity in 1978.

.333 **WASTEWATER SYSTEM OUTFALL AND SLUDGE DISPOSAL FACILITIES**

The City discharges its wastewater effluent into the Sandy River just north of the I-84 interstate bridge. This discharge facility and the effluent all currently meet acceptable standards and permit levels required by EPA/DEQ.

The City's sludge disposal facilities combine settling/de-watering ponds and the trucking of sludge for land application. The City is currently reviewing additional sludge disposal sites as well as a future plant expansion design that will reduce the required need for these disposal properties.

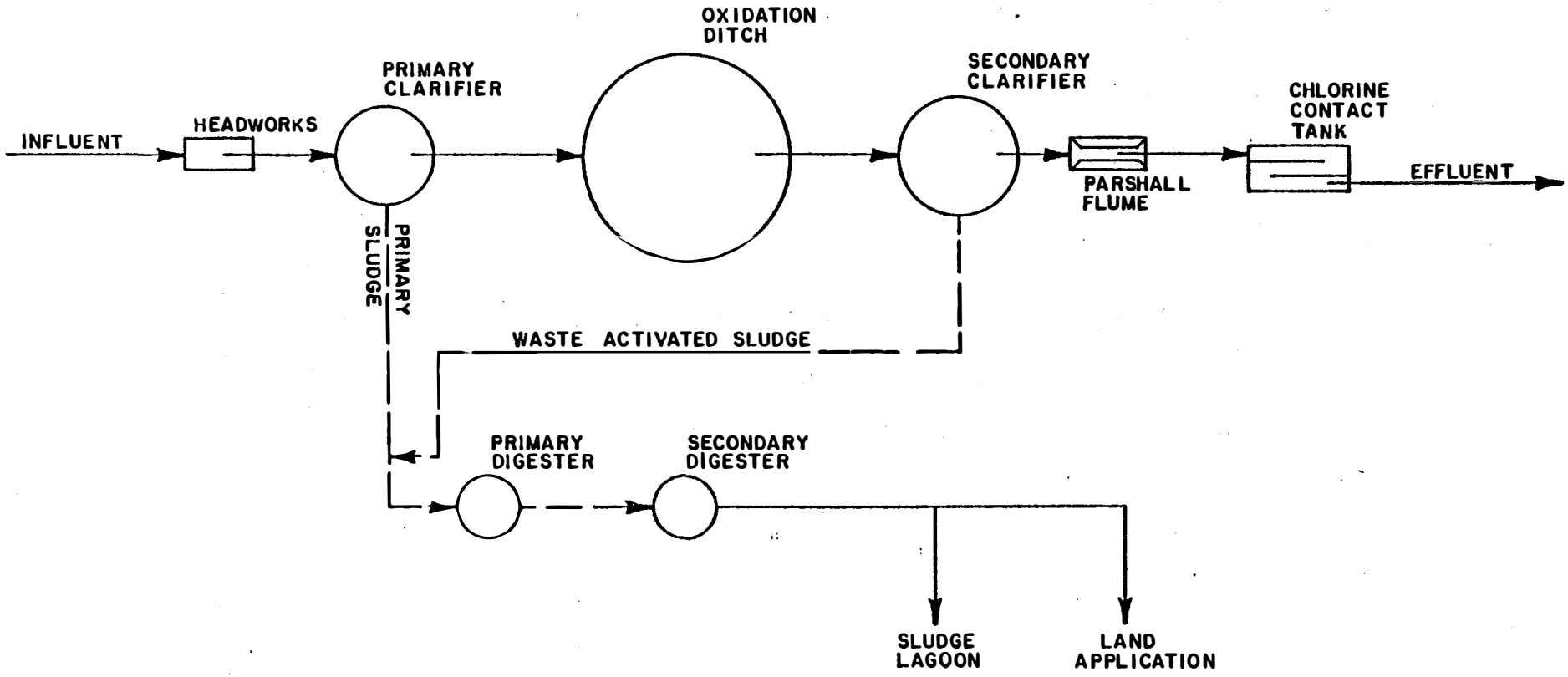


Figure 1

TROUTDALE SEWAGE TREATMENT PLANT
SCHEMATIC DIAGRAM

ESTIMATED CAPACITY OF
CITY OF TROUTDALE
SEWAGE TREATMENT PLANT

I. INDIVIDUAL UNITS

A. Headworks

1. Design Criteria

a. Average flow rate = 88 gal/person/day
b. Peak flow rate = 181 gal/person/day
c. Equivalent residential unit = 3.45 persons/home
d. Flow velocity = 1 ft/sec

2. Capacity Based on Loading

a. 3.9 MGD

3. Capacity Expressed as:

a. Population equivalent (PE)

1. Average flow = 44,318
2. Peak flow = 21,547

b. Equivalent residential units (ERU)

1. Average flow = 12,846
2. Peak flow = 6,245

B. Primary Clarifier

1. Design Criteria

a. 40 foot diameter
b. 12 foot side wall depth
c. 1,257 ft^2 surface area
d. Average loading = 800 gal/ft^2/day
c. Peak loading = 2,000 gal/ft^2/day

2. Capacity Based on Loading Rates

a. Average flow = 1.0 MGD
b. Peak flow = 2.5 MGD

3. Capacity Expressed as:

a. Population Equivalents (PE)

1. Average flow = 11,364
2. Peak flow = 13,812

b. Equivalent Residential Unit (ERU)

1. Average flow = 3,294
2. Peak flow = 4,004

C. Screw Pump

1. Design Criteria

a. 1,563 gal/min sewage
b. 1,563 gal/min return sludge

2. Capacity Based on Size

a. 2.25 MGD

3. Capacity Expressed as:

a. Population Equivalent (PE)

1. Average flow = 25,563
2. Peak flow = 12,431

b. Equivalent Residential Unit (ERU)

1. Average flow = 7,411
2. Peak flow = 3,603

D. Oxidation Ditch (Use as complete mix system):

1. Design Criteria

a. BOD loading = 50 lbs/1000 ft^3
b. Hydraulic detention = 5 hours
c. Volume of ditch - 36,200 ft^3
d. Oxygen requirements at maximum loading 4,254 lbs/d

2. Capacity based on loading

a. 1,810 lbs BOD/day
b. 1.3 MGD
c. Oxygen capacity with two aerators = 5,760 lbs/d

3. Capacity Expressed as:

a. Population equivalents (allowing for 30% BOD removal in primary clarifier)

1. 8,620 persons

b. Equivalent Residential Units (ERU)

1. 2,499 ERU's

E. Secondary Clarifier

1. Design Criteria

a. 60' diameter
b. 12' side wall depth
c. 2,827 ft^2 surface area
d. Average loading = 400 $gal/ft^2/day$
e. Peak loading = 1,000 $gal/ft^2/day$

2. Capacity Based on Loading Rates

a. Average flow = 1.13 MGD
b. Peak flow = 2.83 MGD

3. Capacity Expressed as:

a. Population Equivalent (PE)

1. Average flow = 12,841
2. Peak flow = 15,635

b. Equivalent Residential Units (ERU)

1. Average flow = 3,722
2. Peak flow = 4,532

F. Parshall Flume

1. Design Criteria

a. 1 foot throat
b. 2 feet water depth

2. Capacity Based on Size

a. Low flow 0 gal/day
b. Peak flow 11.2 MGD

3. Capacity Expressed as:

a. Population Equivalents (PE)

1. Peak flow = 61,878

b. Equivalent Residential Units (ERU)

1. Peak flow = 17,936

G. Chlorine Contact Tank

1. Design Criteria

a. Volume = 58,546 gal
b. Average detention time = 1 hour
c. Peak detention time = 30 min

2. Capacity Based on Loading and Time

a. Average flow = 1.4 MGD
b. Peak flow = 2.8 MGD

3. Capacity Expressed as:

a. Population Equivalent (PE)

1. Average flow = 15,909
2. Peak flow = 15,470

b. Equivalent Residential Units (ERU)

1. Average flow = 4,611
2. Peak flow = 4,484

H. Aerobic Digesters (Operated in series):

1. Total System

a. Design Criteria

1. 20 days sludge detention time
2. Batch operation

2. Primary Digester (8 days detention time)

a. Design Criteria

1. Volume = 123,400 gal
2. Hydraulic detention time = 16 days
3. Solids loading = 15,000 mg/l
4. No decanting is possible
5. Sludge detention time = 8 days

3. Secondary Digester (12 days detention time)

a. Design Criteria

1. Volume = 123,400 gal
2. Hydraulic detention time = 16 days (loading

is from primary digester at one time)
3. No decanting is possible
4. Sludge detention time = 12 days (allows four days to empty digester and prepare for next transfer)

4. Capacity of Existing Digester Based on Above is:

   a. 965 lbs SS/day which comes from both the solids in the raw sewage and solids produced from BOD that is removed.

5. Capacity Expressed as:

   a. Population Equivalents = 2,260 PE
   b. Equivalent Residential Units = 665 ERU's

II. STP CAPACITY

A. Liquid Handling Facilities

1. Average hydraulic flow (MG) = 1.0 MGD
2. Peak hydraulic flow (MG) = 2.25 MGD
3. Population Equivalents (PE) = 11,364 persons
4. Equivalent Residential Units (ERU) = 3,294 ERU

B. Biochemical Oxygen Demand Facilities

1. Organic loading = 2,586 lb BOD/day
2. Population Equivalents (PE) = 8,620 persons
3. Equivalent Residential Units (ERU) = 2,499 ERU

C. Sludge Handling Facilities

1. Total solids from BOD and SS = 956 lbs solids/day
2. Population Equivalents (PE) = 2,260 persons
3. Equivalent Residential Units (ERU) = 665 ERU

spur line, together with other less significant spurs, accommodate existing industry and are adequate to accommodate future industrial development and growth along the Marine Drive and Sundial Road corridors in the northwest portion of the City.

As additional industrial demand for rail access develops, these spurs together with the main line(s) can be extended or additional spurs constructed to accommodate those potential needs.

The heavy rail advantage for the City's industrially zoned properties can only enhance timely growth and development. The planning and construction of these facilities is, of course, coordinated with Union Pacific Railway company and those industrial users requesting or requiring future service needs.

.550 AIR

The Port of Portland maintains and operates a general aviation facility in the City of Troutdale. This airport is controlled by an FAA staffed tower and serves as a satellite facility for the Portland International Airport some twelve miles to the west.

An Airport Master Plan is currently being prepared by the Port of Portland. This plan is expected to be completed within the next twelve months. It will address the airport and air related facilities and hopefully detail the expanding use of this airport as a general aviation alleviator for the Portland International Airport. The City looks forward to an expansion of fixed based operations and both commercial and private air activity as a result of this plan and other planning efforts by the Port.

.560 SUPPORT FACILITIES AND SERVICES

The City of Troutdale supports and protects its transportation functions by a Council approved level of police service, and a maintenance program designed to preserve the investment in these facilities. The total replacement cost of City's road system is contained in the table "Street Inventory by Classification."

The City supports a high service level for street cleaning throughout the community with a minimum of four full town street sweeps per year, and bi-weekly street sweeps in the downtown core area

during the summer months. The City also maintains all City street system catch basins and drywells and storm sewer systems within its jurisdictional boundaries. Snow removal on local streets and some County facilities is provided by the City.

SECTION 3

NEEDS AND REQUIREMENTS

3.000 NEEDS & REQUIREMENTS

.100 GENERAL

The City of Troutdale has neither deferred capital projects nor deferred the maintenance of its public facilities. The City's infrastructure is relatively new and its condition is generally excellent.

The City maintains full control of its water and sewer systems, shares control of its storm water collection and outfall system (see map titled "Storm Sewer System"). The City controls all of the local streets and most neighborhood collectors. Multnomah County and the Oregon Department of Transportation maintain ownership and control of some neighborhood collectors, all arterials and the Interstate system. The condition of these facilities varies and improvements are targeted for these facilities even though the City may not control the funding sources accordingly.

It has generally been the City's policy to respond to the development needs by extending site and area specific facilities commensurate with the need and benefit in a time frame established by the development itself. It has also been the City's policy to extend "key" facilities in order to enhance the overall system and encourage future development. As a result, the City currently has excess capacity in both its water and wastewater systems and facilities. Troutdale maintains a "C" or better level of service for its road system and works with the Oregon Department of Transportation and Multnomah County to ensure adequate capacity and service levels for their respective road systems.

A public facilities plan usually attempts to estimate the timing of facility needs. This is often difficult and misleading. The City's approach heretofore has been, as mentioned above, split between providing facilities in response to development pressure, and constructing key facilities to encourage development. However, project timing has been estimated in this plan in order to provide a potential gauge of the fiscal needs and their funding sources.

Each project included in this plan is identified on the three maps titled "Public Facilities Plan-Road System", "Public Facilities Plan-Water System", and "Public Facilities Plan-Sanitary Sewer System".

Each project is noted with an identifying number which corresponds with a Public Facilities Plan/data sheet. This data sheet references the map i.d. number, describes the project, estimates the total project costs, estimates the year of construction, establishes the benefit and provides a more detailed exhibit map.

A total "Cash Flow Summary Sheet" tabulates the construction cost and timing.

3.200 WATER SUPPLY AND DISTRIBUTION

.210 GENERAL

The City of Troutdale's water supply, storage and distribution system has a current capacity, based on a combination of acceptable standards, to service a population equivalency of approximately 16,000. The table "Flow Rate & Storage Analysis" in Section 2.210 tabulates the requirements. The table titled "Projected System Demands" in this section analyzes the development/population driven system improvement requirements.

.220 SUPPLY

It will be necessary for the City to add additional deep wells in order to meet population growth, industrial demands and fire protection needs. These supply projects are described on the following Public Facilities Plan/data sheets.

.230 STORAGE

The City currently has adequate storage for population equivalency approximating 16,000. However, as the City grows beyond this and as the industrial areas demand a higher level of fire flow, additional storage will be required. The construction of these storage facilities will be commensurate with their need, and the time frame specified on the Public Facilities Plan/data sheets are only estimates.

.240 DISTRIBUTION

The City's existing water distribution system provides service to most locations within the City's jurisdictional and service boundaries. However, some additional system "looping" needs to be constructed as does development driven system extensions.

The System requirements for both looping and development driven extension are provided on the attached Public Facilities Plan/data sheets. In addition, broad "corridors" of service needs are identified. The corridor facilities would usually be constructed to fulfill the service and extension requirements of priviate development, and would be funded by that development accordingly. As a result, the estimated total project costs (if they are included) are determined by making broad assumptions.

CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #1

PROJECT: NORTH HARLOW WATERLINE EXTENSION (Phase I)

ESTM TOTAL PROJECT COST: $75,000

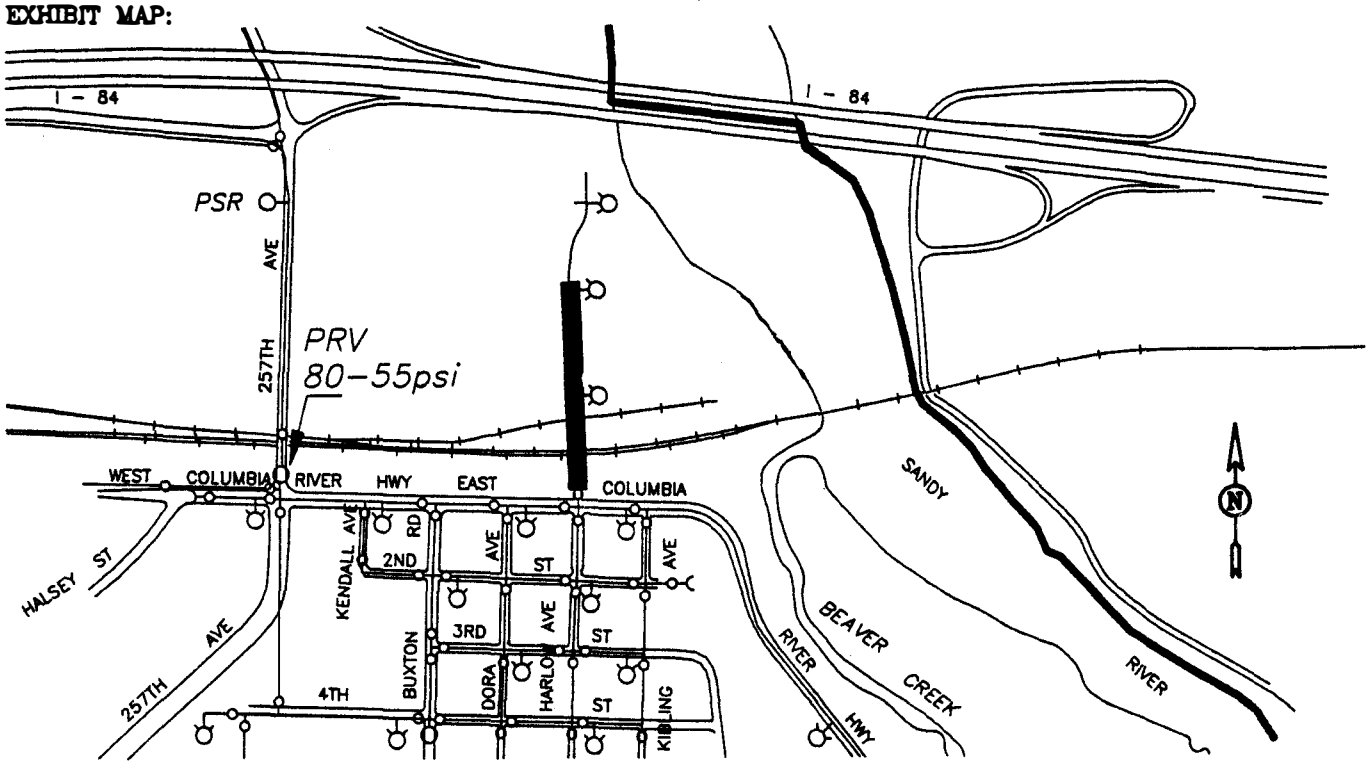
Project Description:
This project will extend a 12" (approximately 650 feet) supply line from the Historic Columbia River Highway under the railroad tracks to the Troutdale wastewater treatment facility. The installation of valves, hydrants, et cetera, to City standards is incidental to this total project construction.

Project Justification/Benefit:
North Harlow was closed and vacated due to an unsafe rail crossing. As a result, it was necessary to enhance (increase) the fire flow capacity in the area isolated by the road closure. In addition, the extension of this service will provide future "looping" needs within Pressure Zone V.

Funding Notes:
This project is funded entirely from a local improvement district with the City participating with a private development. The City's designated share of the project will be funded from the Water Improvement Fund with resources primarily system development charges and some renewal and replacement funds.

#19

EXHIBIT MAP:



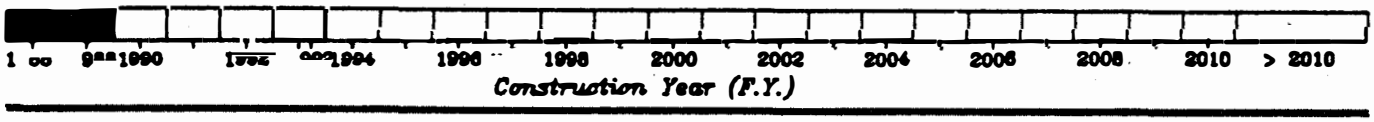
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #2

PROJECT: GRAHAM ROAD WATER EXTENSION

ESTM TOTAL PROJECT COST: $45,000



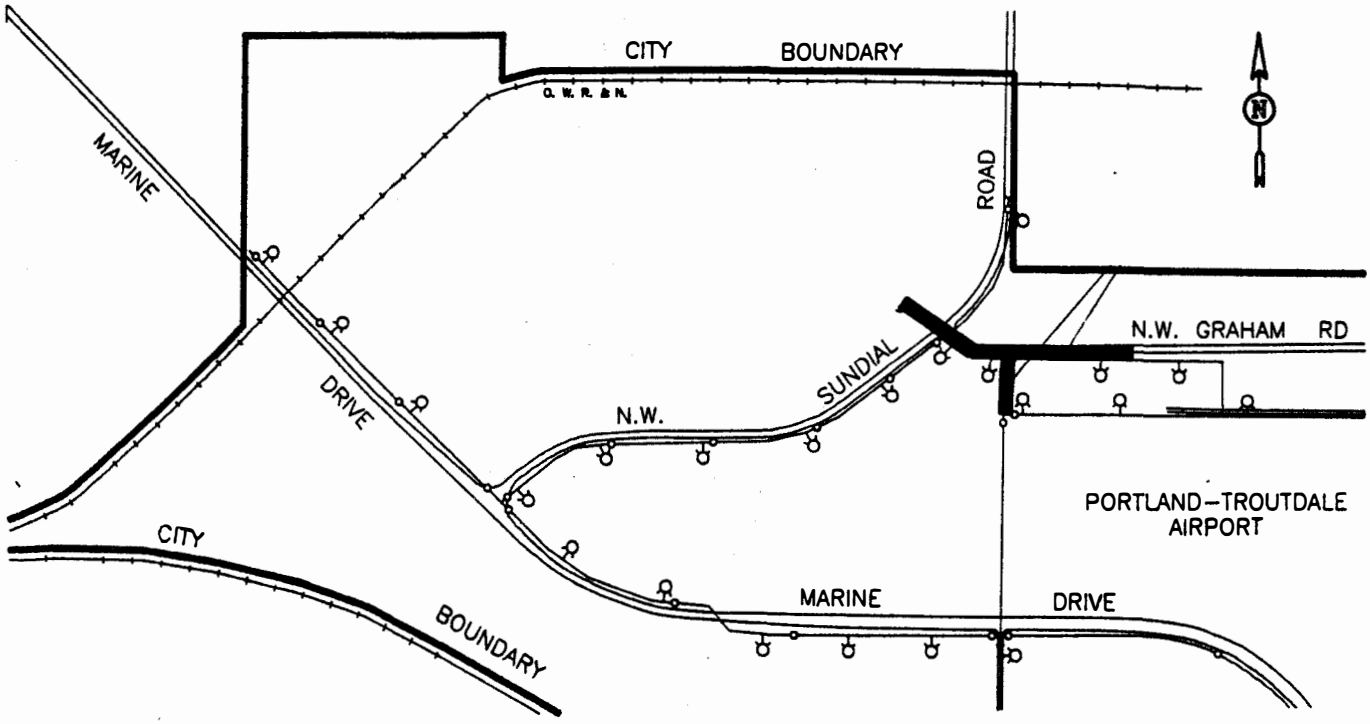
Project Description:
This project will construct approximately 1200 feet of 12" waterline in North Graham Road together with fire hydrants, valves and other incidental appurtenances.

Project Justification/Benefit:
The industrial area in water Pressure Zone V is rapidly developing. To accommodate this development, the extension of this waterline is necessary from its existing in-point to Sundial Road. This extension will provide consumable water and fire flow protection for the area.

Funding Notes:
The project will be funded entirely by the Port of Portland. Portions may be funded via the Port's involvement in a local improvement district.

#20

EXHIBIT MAP:



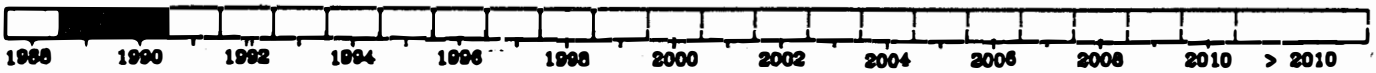
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #3

PROJECT: MARINE DRIVE/SUNDIAL ROAD WATER EXTENSION

ESTM TOTAL PROJECT COST: $430,000



Construction Year (F.Y.)

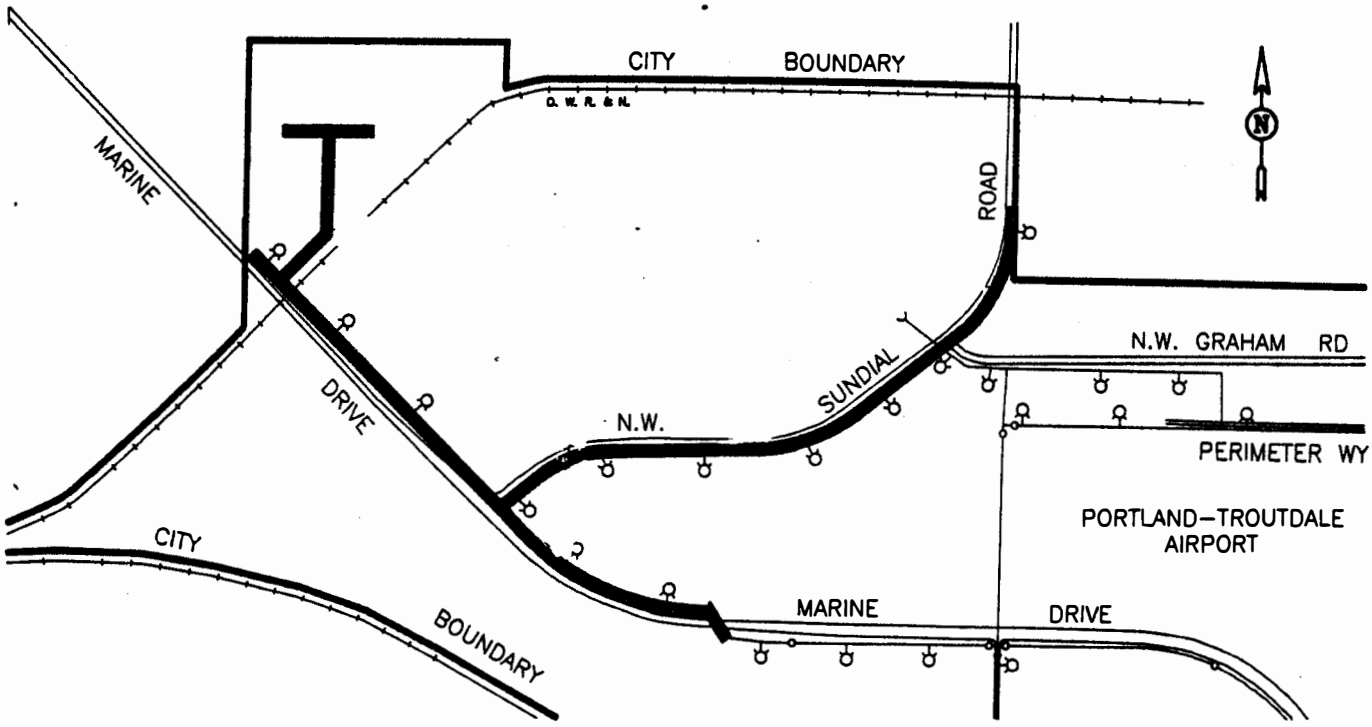
Project Description:
This project is to construct 8400 feet of 12" waterline together with fire hydrants, valves and other incidental appurtenances.

Justification/Benefit:
The industrial growth in water Pressure Zone V demands extension of facilities. This project will benefit these properties by providing both domestic as well as fire flow requirements.

Funding Notes:
This project will be funded by a local improvement district with costs assigned by parcel benefit.

#21

EXHIBIT MAP:



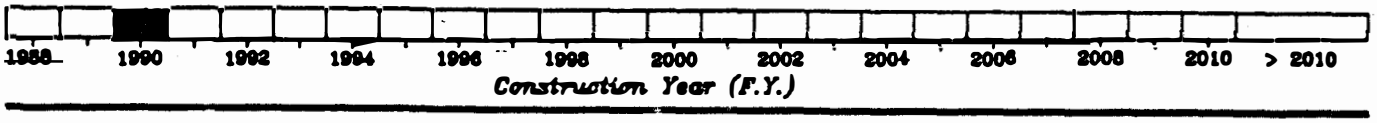
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #4

PROJECT: NORTH GRAHAM ROAD WATER MAIN EXTENSION

ESTM TOTAL PROJECT COST: $22,000



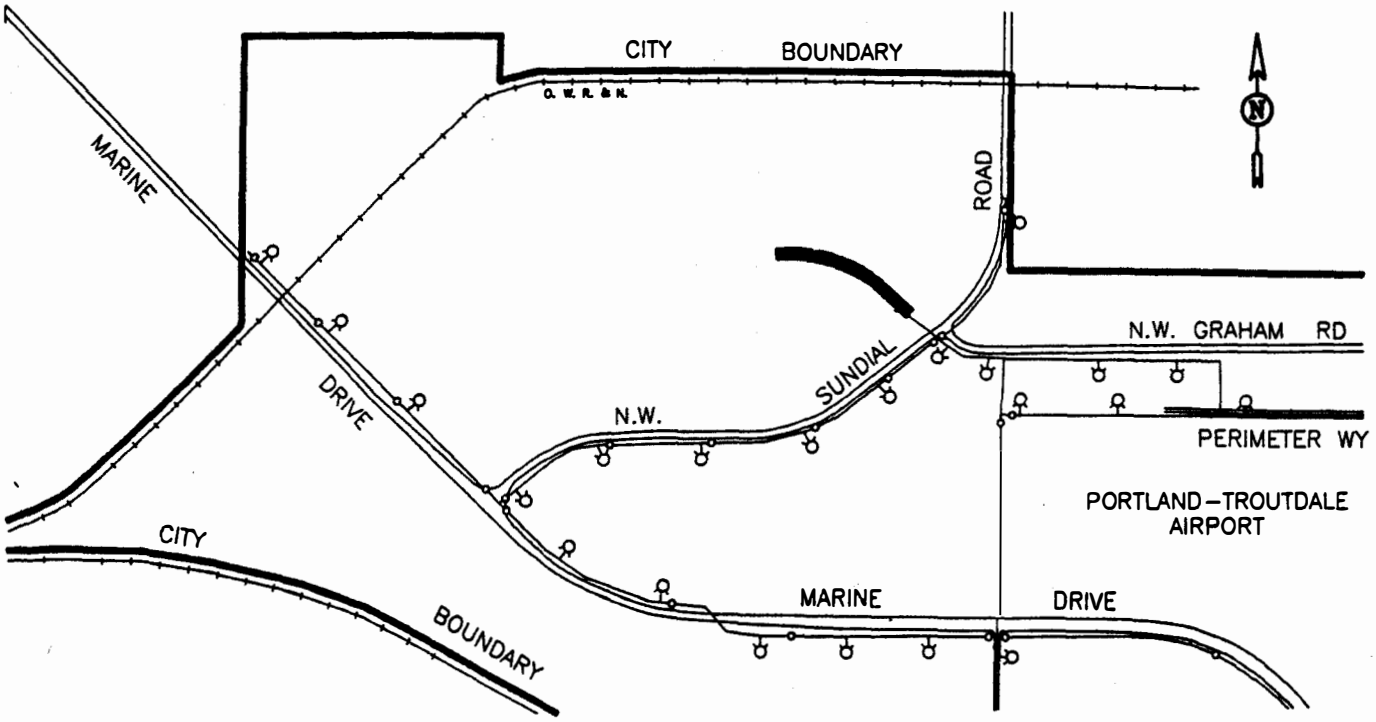
Project Description:
This project will extend a 12" water main from Sundial Road approximately 600 feet to the west together with fire hydrants, valves and all associated appurtenances.

Project Justification/Benefit:
An industrial subdivision was recently formed with North Graham being extended into those parcels. It is necessary to provide both consumptive and fire flows for this development.

Funding Notes:
This project will be funded entirely by the Port of Portland and/or private property owners.

#22

EXHIBIT MAP:



CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #5

PROJECT: NORTH HARLOW / 257TH AVENUE LOOP

ESTM TOTAL PROJECT COST: $42,000

1988	1990	1992	1994	1996	1998	2000	2002	2004	2006	2008	2010	> 2010

Construction Year (F.Y.)

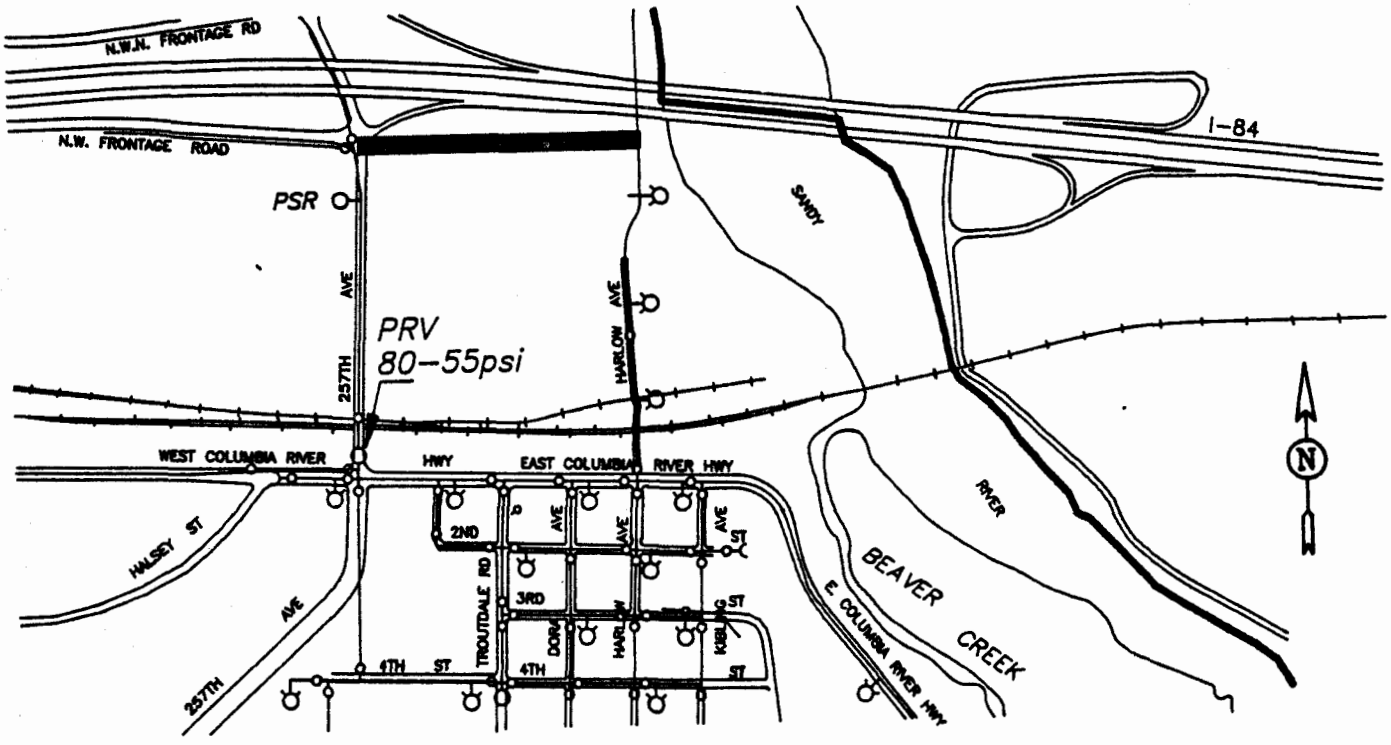
Project Description:
This project will consist of approximately 1100 feet of water main together with fire hydrant, valves and other incidental appurtenances.

Project Justification/Benefit:
This project will provide for enhanced fire flow in the industrial/commercial area between I-84 and the Union Pacific Railroad tracks. In addition, it will provide for "looping" benefit to Pressure Zone IV and subsequently enhance the fire flows within that zone.

Funding Notes:
This project will be funded from both public (50%) and private (50%) sources. The City's contribution will be from its Water Improvement Fund, with monies derived from system development charges.

#23

EXHIBIT MAP:



CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #6

PROJECT: NORTH HARLOW WATERLINE EXTENSION

ESTM TOTAL PROJECT COST: $80,000

1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 > 2010

Construction Year (F.Y.)

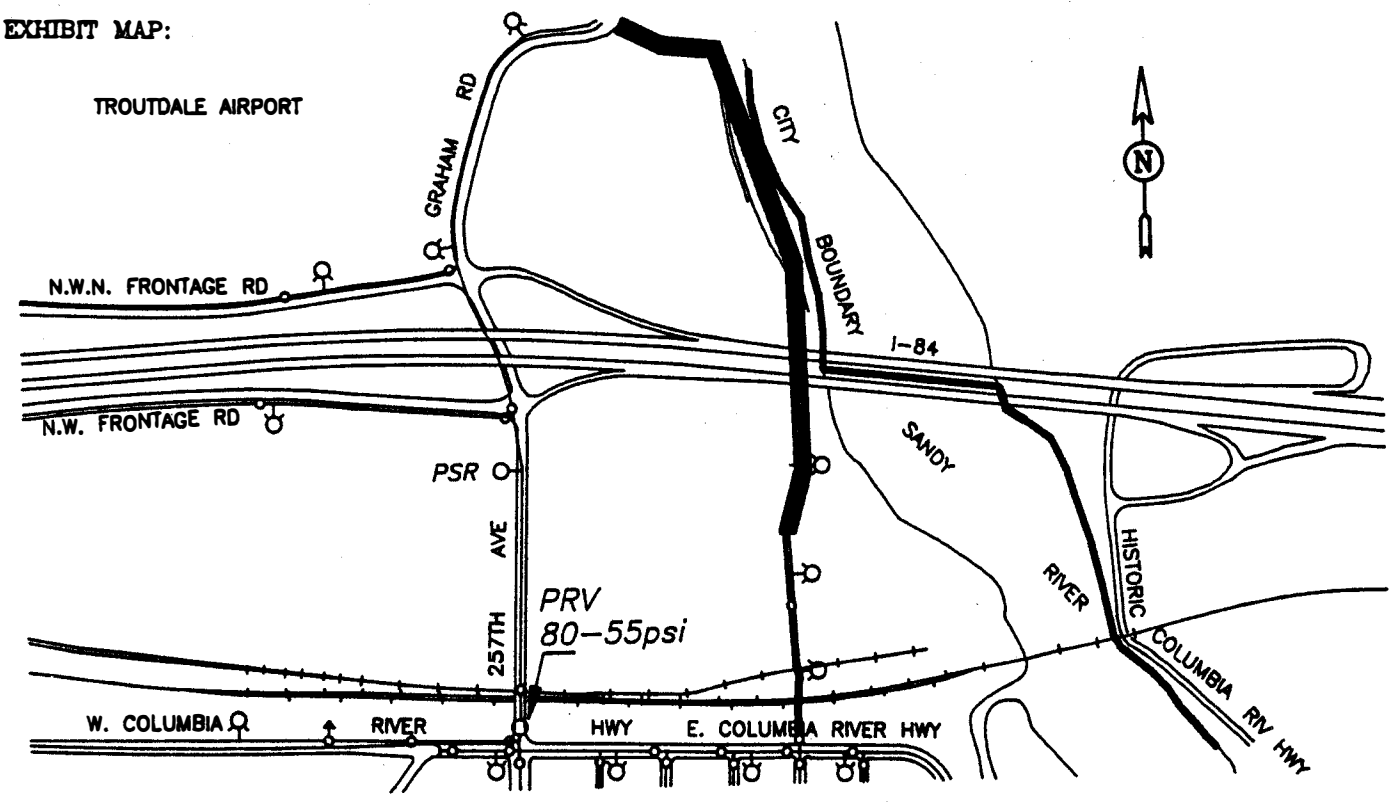
Project Description:
This project will extend the existing North Harlow 12" waterline through City properties and under I-84 and will connect to the Graham Road waterline. This project will include approximately 12" main, fire hydrants, valves, and all other incidental appurtenances. A pressure regulating valve will be required.

Project Justification/Benefit:
As development takes place adjacent to I-84, additional fire flow protection will be necessary. In addition, the "looping" effects of this project will enhance all the flows within Pressure Zone V.

Funding Notes:
This project will be funded primarily from private sources (90%) with the City (10%) contributing to oversizing requirements. Oversizing will be paid from the City's Water Improvement Fund (system development charges).

#24

EXHIBIT MAP:



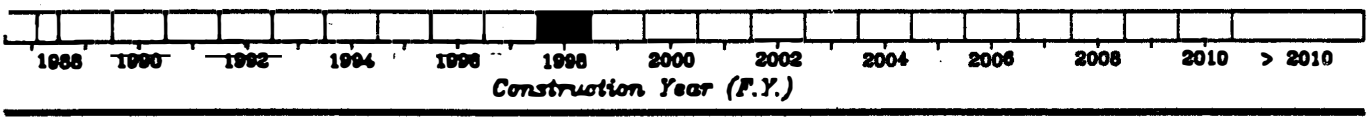
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #7

PROJECT: 244TH/HISTORIC COLUMBIA RIVER HIGHWAY WATERLINE EXTENSION

ESTM TOTAL PROJECT COST: $85,000



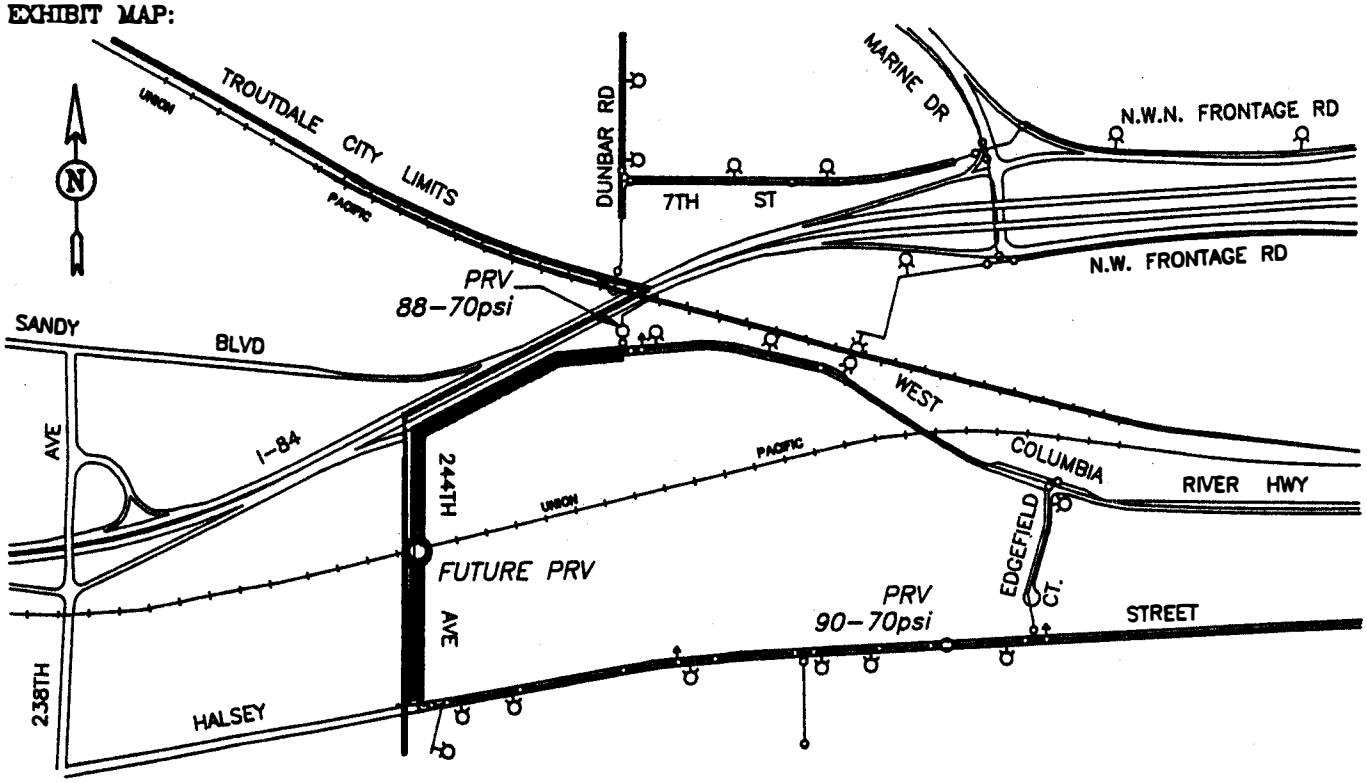
Project Description:
This project would construct approximately 2400 feet of 12" waterline connecting at Halsey on the south and the Historic Columbia River Highway on the north. This project would include water main, fire hydrants, valves and other appurtenances. A pressure regulating valve will be required.

Project Justification/Benefit:
This water facility would provide both domestic and fire requirements along 244th Avenue and portions of the Columbia River Scenic Highway. More importantly, it would provide for "looping" and redundancy of supply from Pressure Zones II, III and IV into the industrial area of Pressure Zone V. This project will be required so that the full benefit of Reservoir #5 might be realized within Pressure Zone V.

Funding Notes:
Primary funding would be from the City's Water Improvement Fund (80%) with system development charges as the primarily resource. Private (20%) participation will be required for portions directly benefiting and for providing service to parcels of land currently not serviced.

~~#25~~

EXHIBIT MAP:



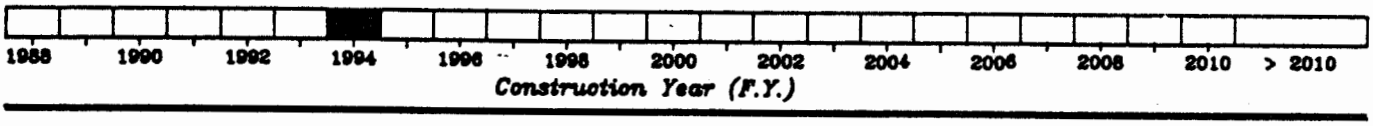
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #8

PROJECT: CHERRY PARK WATERLINE EXTENSION

ESTM TOTAL PROJECT COST: $38,000



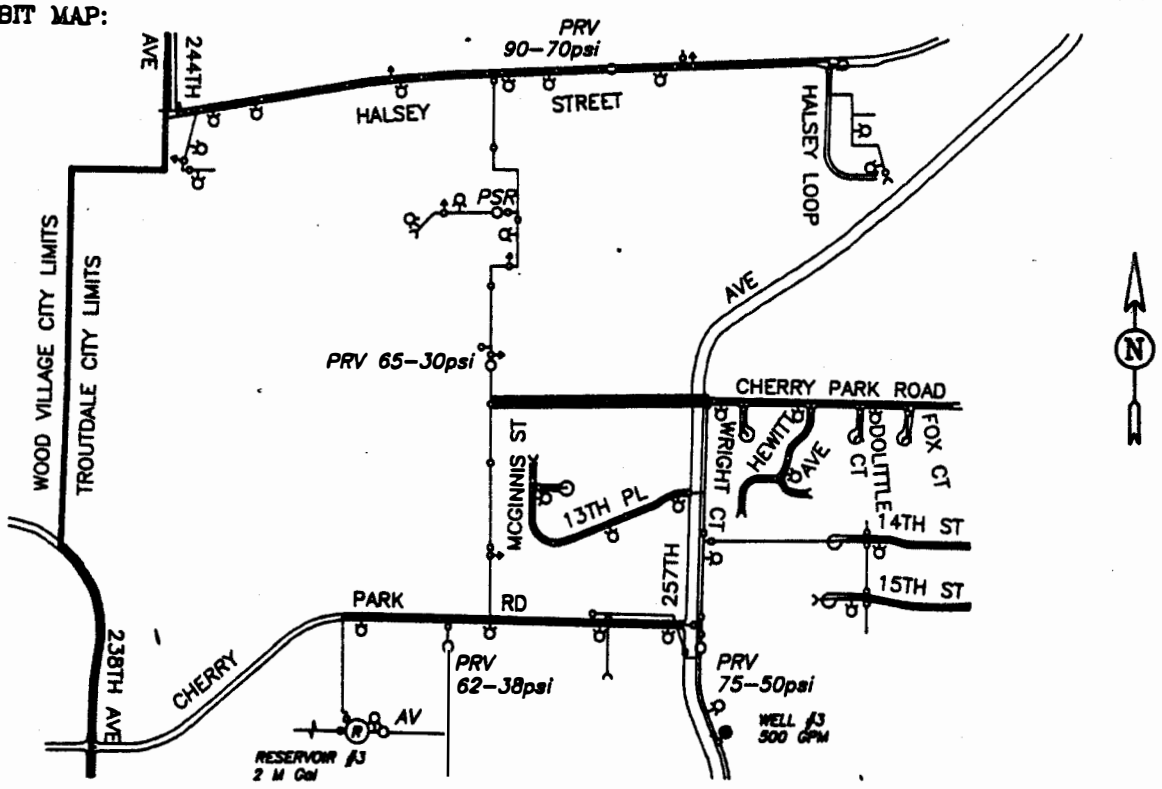
Project Description:
This project would construct approximately 1200 feet of a 12" waterline together with fire hydrants, valves and other appurtenances from Cherry Park at 257th Avenue on the east to the existing 12" waterline on the west.

Project Justification/Benefit:
This project would be constructed to accommodate development pressures and provide system "looping" within Pressure Zone II. This waterline would allow for a better distribution of water within the zone when Reservoir #5 is constructed as well.

Funding Notes:
This project would be funded jointly by benefiting private property owners (60%) and the City of Troutdale (40%). The City's portion would be commensurate with oversizing requirements for "looping" and the City's portion would be funded from the Water Improvement Fund.

#26

EXHIBIT MAP:



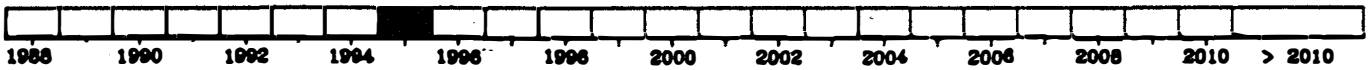
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #9

PROJECT: CHERRY PARK (GLISAN) WATERLINE EXTENSION

ESTM TOTAL PROJECT COST: $48,000



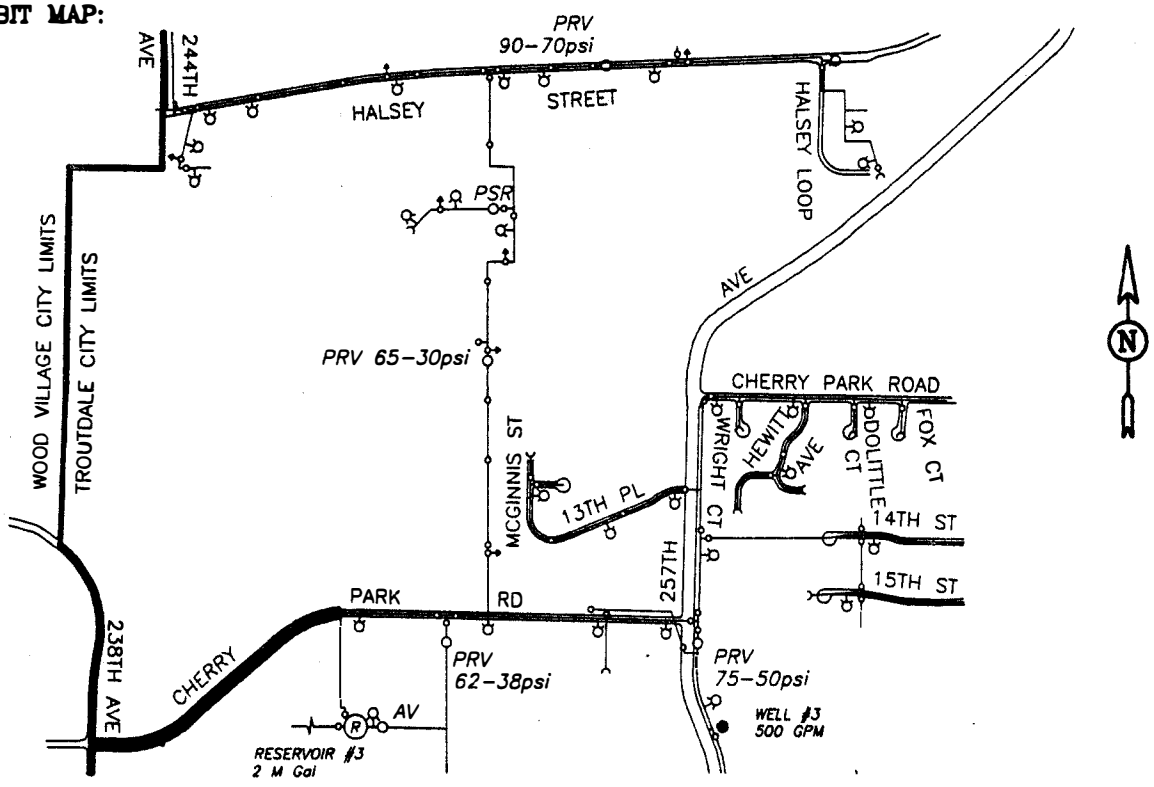
Project Description:
This project would construct approximately 1800 feet of 8" and 12" waterline from the existing end point on Cherry Park to 244th/242nd. This project would include waterline, fire hydrants, valves and other incidental appurtenances.

Project Justification/Benefit:
This extension would be development driven and will provide supply to the upper levels of Pressure Zone II. The "network" system required for development north of the waterline will make connection with it along this extension.

Funding Notes:
This project would be funded primarily as a result of development pressures, and paid for by the benefiting property owners (90%). The City's participation (10%) would be limited to oversizing requirements and that participation would be funded from the Water Improvement Fund, with system development charges as the primary resource.

#27

EXHIBIT MAP:



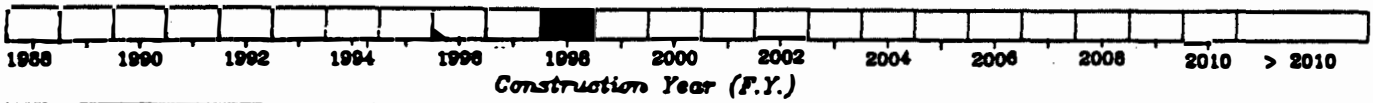
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #10

PROJECT: RESERVOIR #5 (MULTNOMAH COUNTY FARM)

ESTM TOTAL PROJECT COST: $700,000



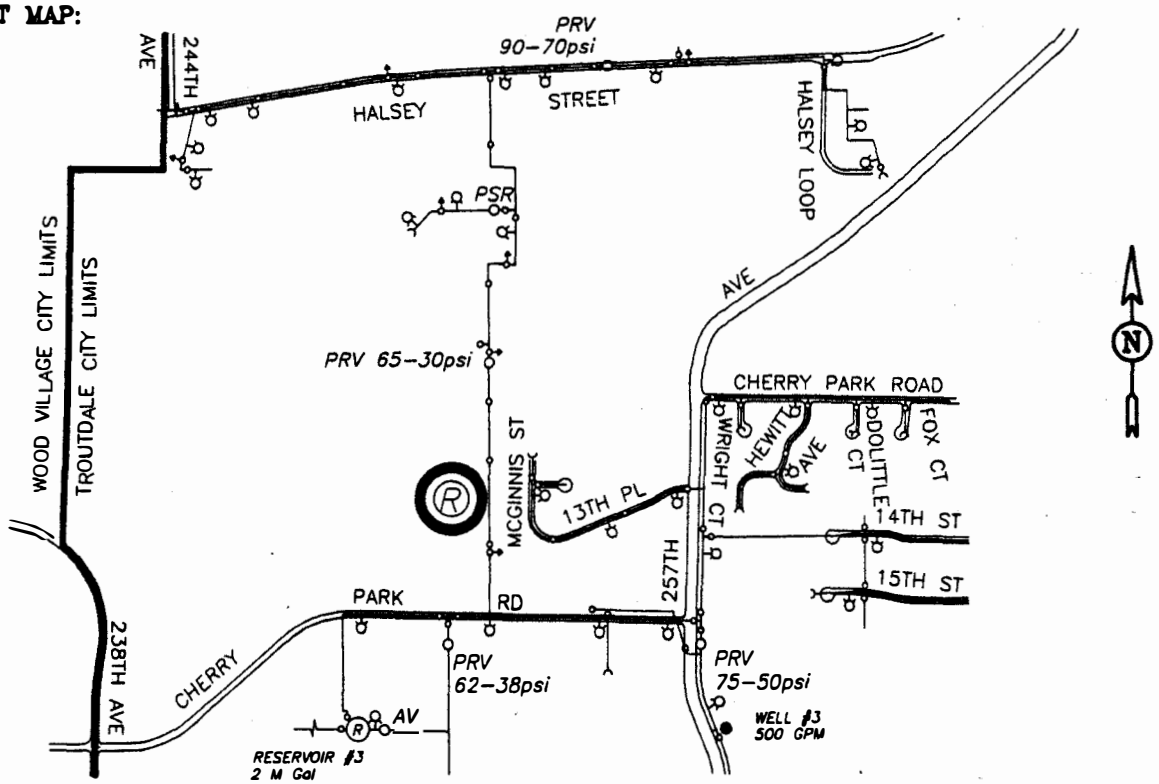
Project Description:
In 1986 Pressure Zone III was added to the City's system. Together with this pressure zone, the City installed major "looping" pipe networks to serve existing and projected future needs. This 2,000,000-3,000,000 gallon reservoir would be tied to this system.

Project Justification/Benefit:
This reservoir has been located so that it can proficiently provide storage, peaking, and fire flow requirements for the industrial/commercial areas of Zones III, IV and V. As these zones in-fill and development takes place, this storage will be required accordingly.

Funding Notes:
This project will be constructed entirely from system development charges and/or revenue bonds retired primarily from the collection of system development charges and user fee (capital) set asides.

#16

EXHIBIT MAP:



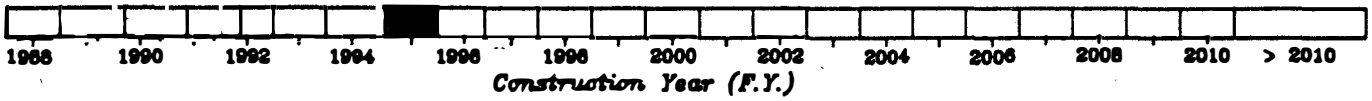
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #11

PROJECT: NO. MULTNOMAH COUNTY FARM WATER SUPPLY/DISTRIBUTION NETWORK

ESTM TOTAL PROJECT COST: $130,000



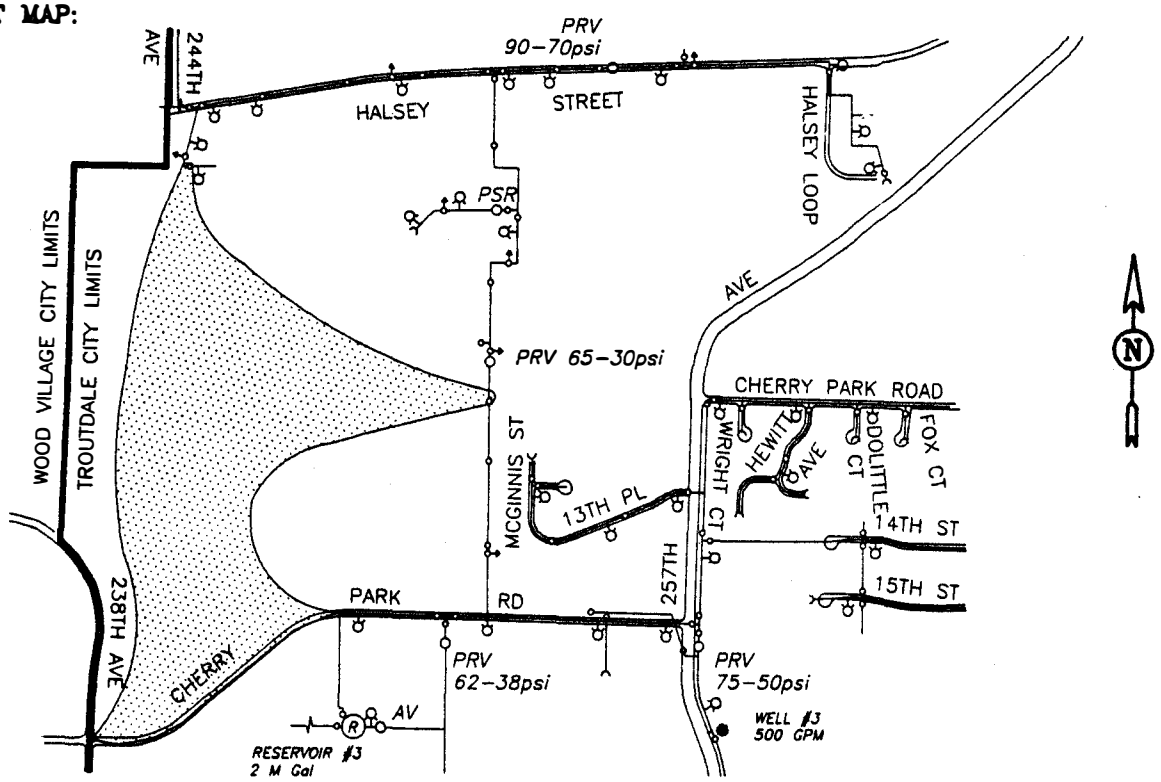
Project Description:
A series of waterlines will be required for the development of the vacant property on the Multnomah County Farm. It will serve both within Pressure Zones II and III. This network will make connections to both existing and proposed projects and will provide for some "looping" as well.

Project Justification/Benefit:
The project will primarily benefit development adjacent to the waterlines developed within the broad corridor depicted. This benefit will be to provide both domestic and fire flow protection for the area and its future development.

Funding Notes:
This project will be primarily funded by benefiting property owners, with the City possibly participating in system oversizing for "looping" needs.

#28

EXHIBIT MAP:



CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #12

PROJECT: SUBDIVISION INTERNAL WATER NETWORK

ESTM TOTAL PROJECT COST: $65,000

1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 > 2010

Construction Year (F.Y.)

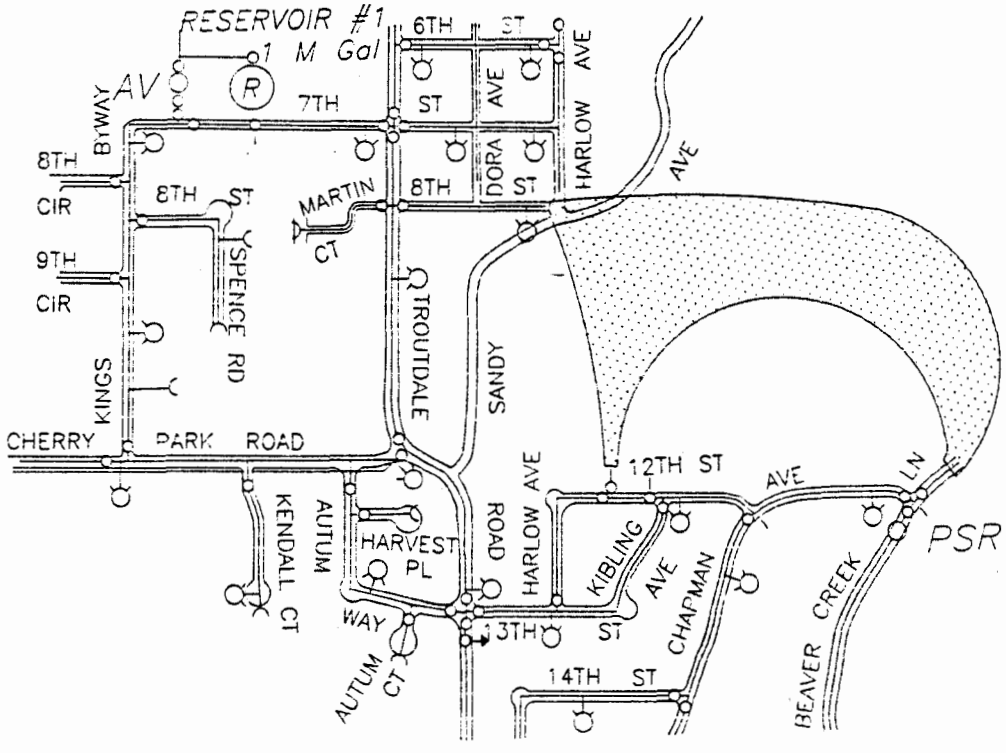
Project Description:
This project includes a series of 8" and 6" waterlines together with fire hydrants, valves and other incidentals appurtenances.

Project Justification/Benefit:
This project will benefit developable property by providing domestic fire flow protection.

Funding Notes:
This project will be funded entirely by benefiting property owners.

#29

EXHIBIT MAP:



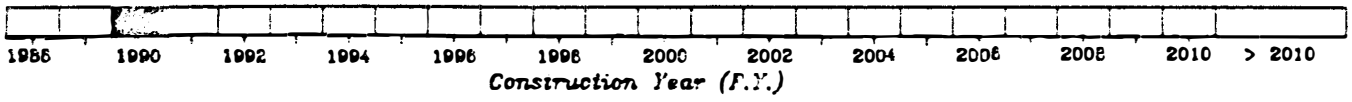
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #13

PROJECT: SANDEE PALISADES IV SUBDIVISION NETWORK

ESTM TOTAL PROJECT COST: $100,000



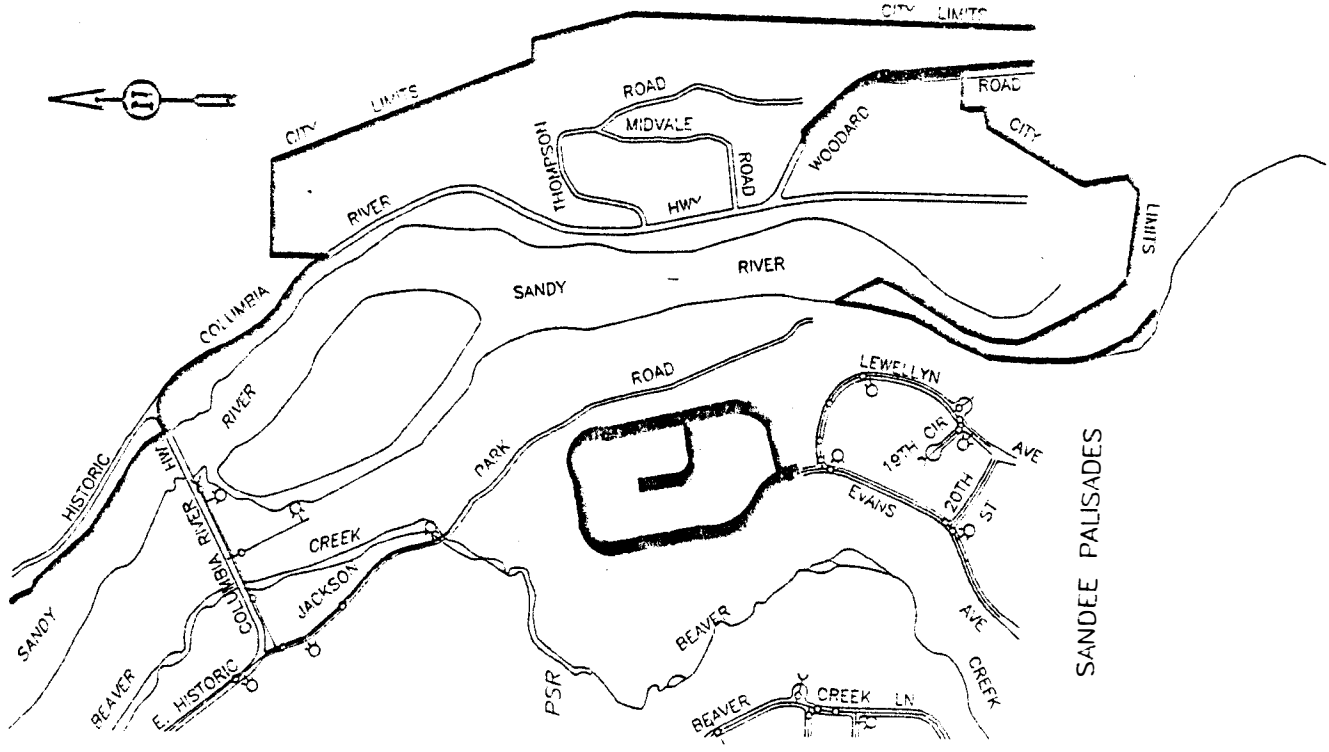
Project Description:
This project will construct 3400 feet of an 8" waterline together with fire hydrants, valves and incidental appurtenances.

Project Justification/Benefit:
This project will benefit any proposed development by providing both domestic and fire low water protection.

Funding Notes:
This project will be funded entirely by the benefiting properties.

#30

EXHIBIT MAP:



CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #14

PROJECT: EAST TROUTDALE WATERLINE EXTENSION

ESTM TOTAL PROJECT COST: $180,000

1986 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 > 2010

Construction Year (F.Y.)

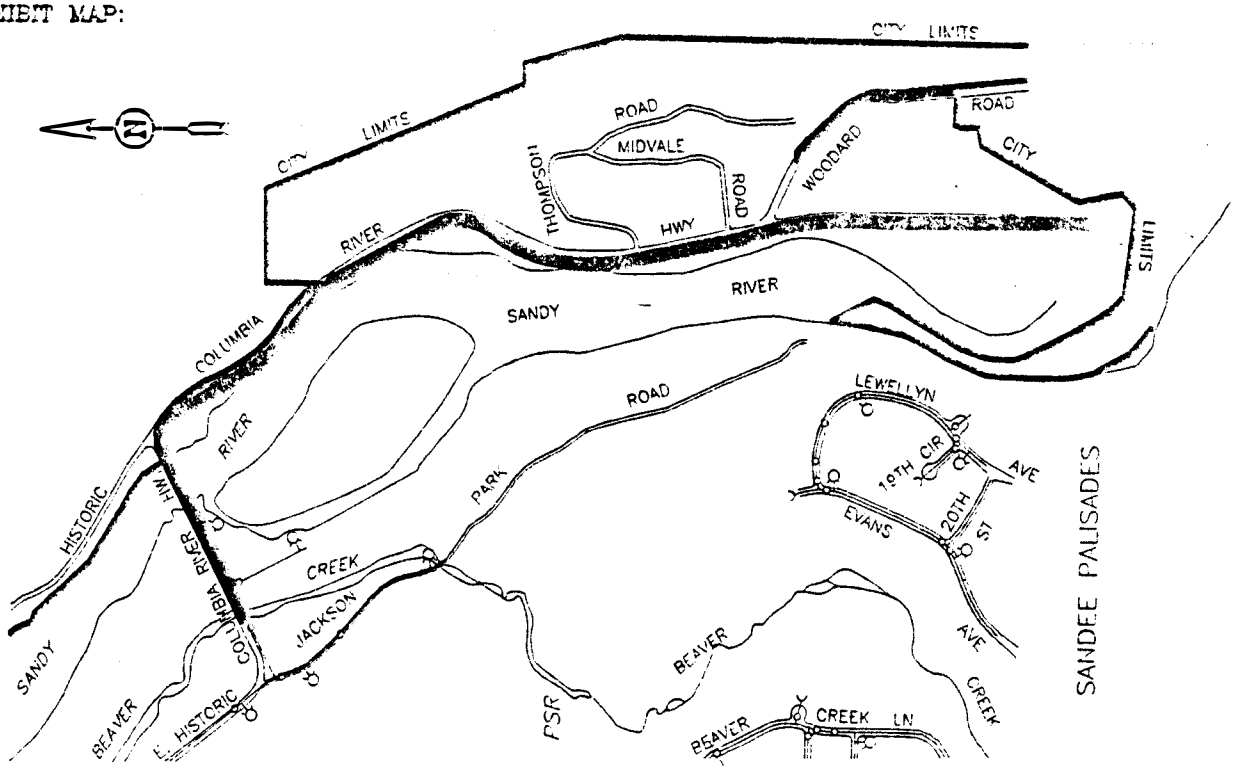
Project Description:
This project would construct an 8" to 12" waterline approximately 5800 feet in length including fire hydrants, valves and other incidental appurtenance.

Project Justification/Benefit:
This project would provide a public water supply on the east side of the Sandy River for all users currently having private wells. This project would provide for domestic and well as fire flow protection, and may offer a future emergency interconnect with the Corbett water district.

Funding Notes:
The project would be funded by benefiting property owners.

#31

EXHIBIT MAP:



CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #15

PROJECT: HENSLEY ROAD WATERLINE EXTENSION

ESTM TOTAL PROJECT COST: $52,000

1986 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 > 2010

Construction Year (F.Y.)

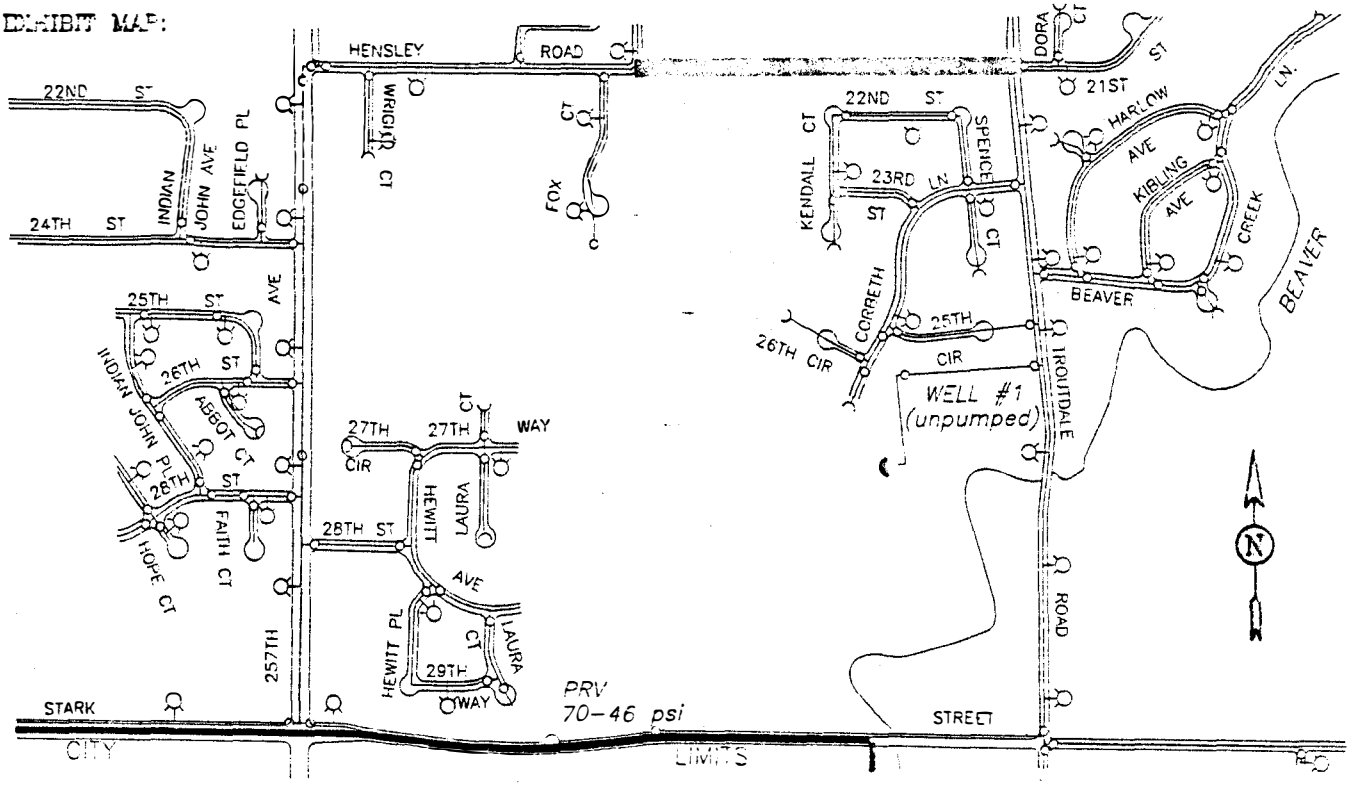
Project Description:
This project would construct a 12" waterline from Hensley to 262nd on the west to Troutdale Road on the east. Approximately 1700 feet of a 12" waterline together with fire hydrants, valves and other incidental appurtenances would be required.

Project Justification/Benefit:
This project would provide service to some currently unserved property as well as the City's Sunrise Park. In addition, it would provide a major "looping" need for Pressure Zones I and II.

Funding Notes:
This project would primarily be funded from the City's Water Improvement Fund, with system development charges as its primary resource. Participation from benefiting property owners may also be required.

#32

EXHIBIT MAP:



CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #16

PROJECT: RESERVOIR #6 (STARK STREET)

ESTM TOTAL PROJECT COST: $300,000

1986 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 > 2 0D

Construction Year (F.Y.)

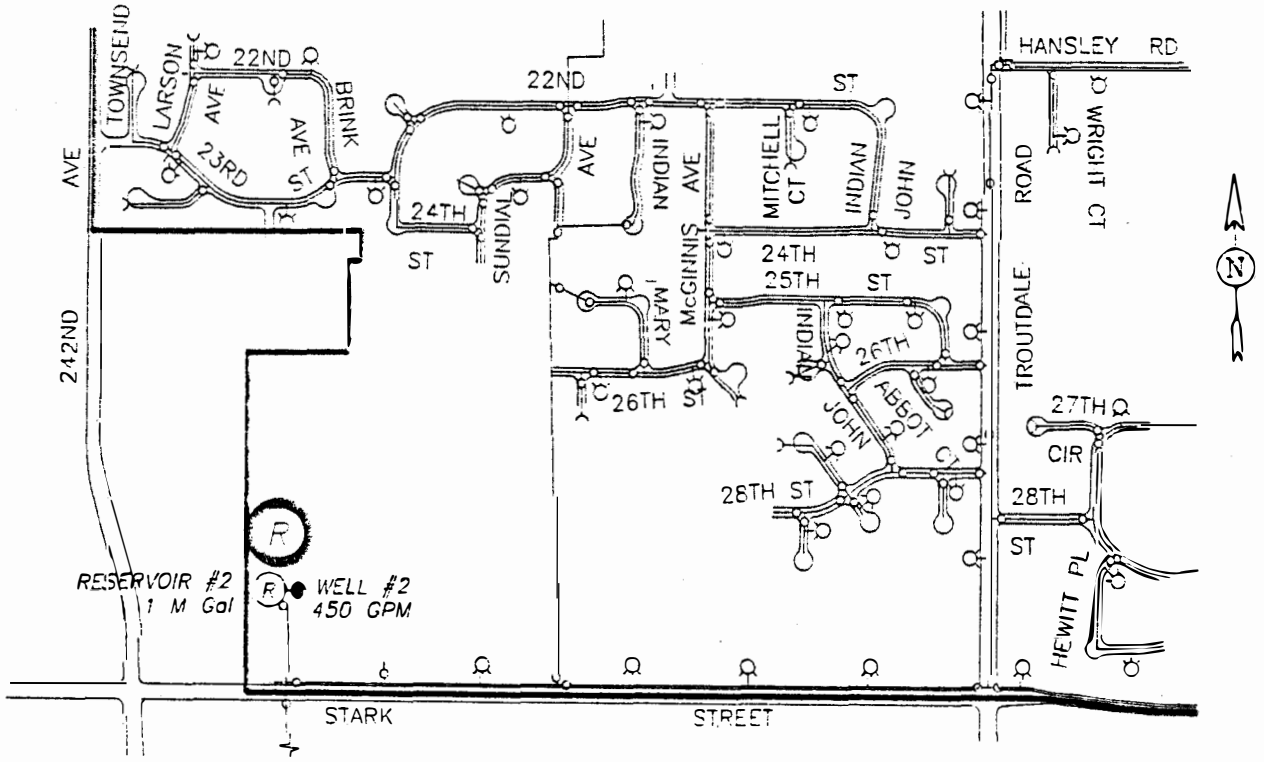
Project Description:
Currently, Pressure Zone I has a single reservoir of 1,000,000 gallons serving it. As the zone in-fills with new development, new storage will be required accordingly. It is proposed that this storage requirement be met by constructing a second 1,000,000 gallon standpipe adjacent to the existing facility.

Project Justification/Benefit:
As Pressure Zone I in-fills with new development, the existing storage capacity will not be adequate. The needs for peaking storage and fire flow requirements, together with the special circumstances of the area, will require a second reservoir.

Funding Notes:
This project will be funded from the Water Improvement Fund with resources from system development charge reserves or revenue bonds.

#17

EXHIBIT MAP:



CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #17

PROJECT: STARK STREET WATER CORRIDOR CONNECTORS

ESTM TOTAL PROJECT COST: $70,000

1988	1990	1992	1994	1996	1998	2000	2002	2004	2006	2008	2010	> 2010

Construction Year (F.Y.)

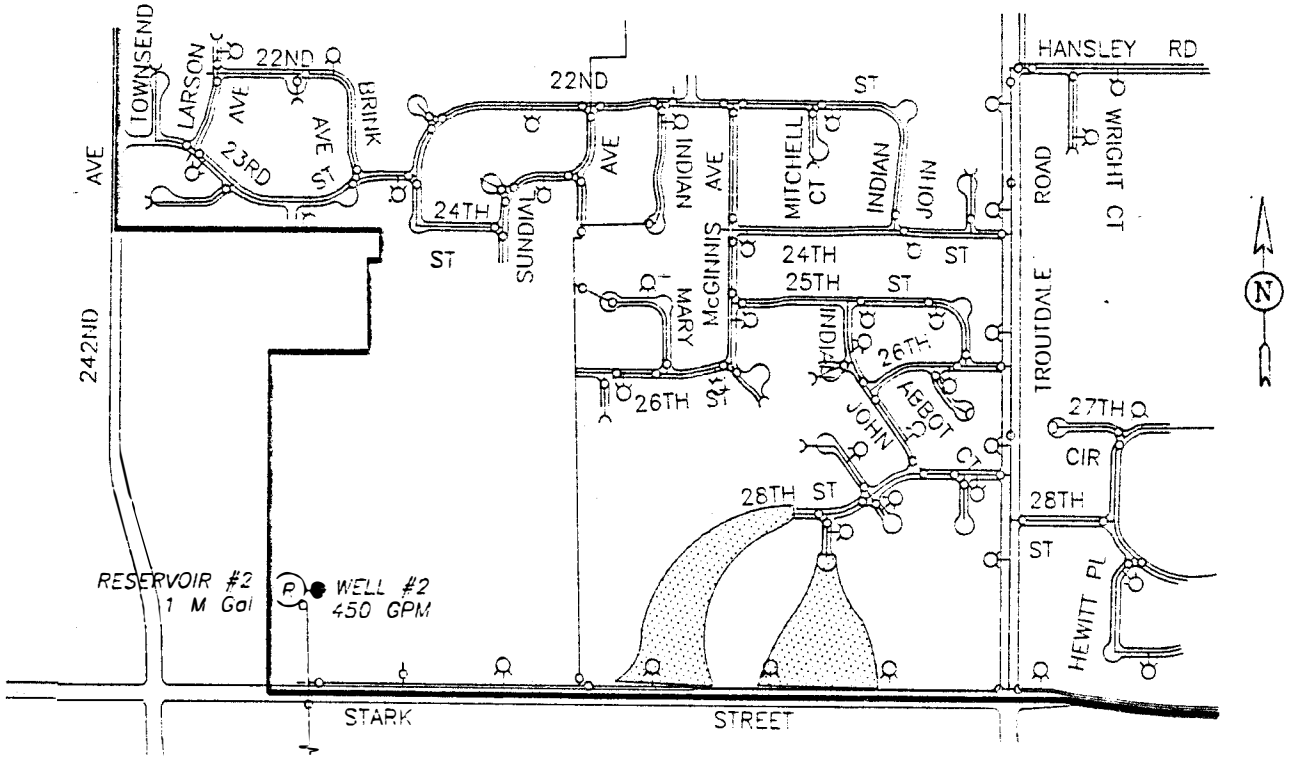
Project Description:
This project would construct 8" waterlines commensurate with development needs north of Stark Street. This project would include the necessary waterlines, fire hydrants, valves and incidental appurtenances.

Project Justification/Benefit:
As the Stark Street commercial area develops, as well as the balance of residential subdivisions, connections to the Stark Street waterline will be required. These connections will provide domestic and fire flow protection and generally enhance the circulation of water within Pressure Zone I.

Funding Notes:
These facilities would be constructed entirely from the funds from benefiting property owners.

433

EXHIBIT MAP:



CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #18

PROJECT: STARK STREET / INTERNAL SUBDIVISION WATERLINE NETWORK

ESTM TOTAL PROJECT COST: $120,000

1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 > 2010

Construction Year (F.Y.)

Project Description:
This project(s) would construct 6" and 8" waterline as necessary to provide for development. These waterlines, fire hydrants, valves and other incidental appurtenances would connect existing waterlines to the Stark Street waterline.

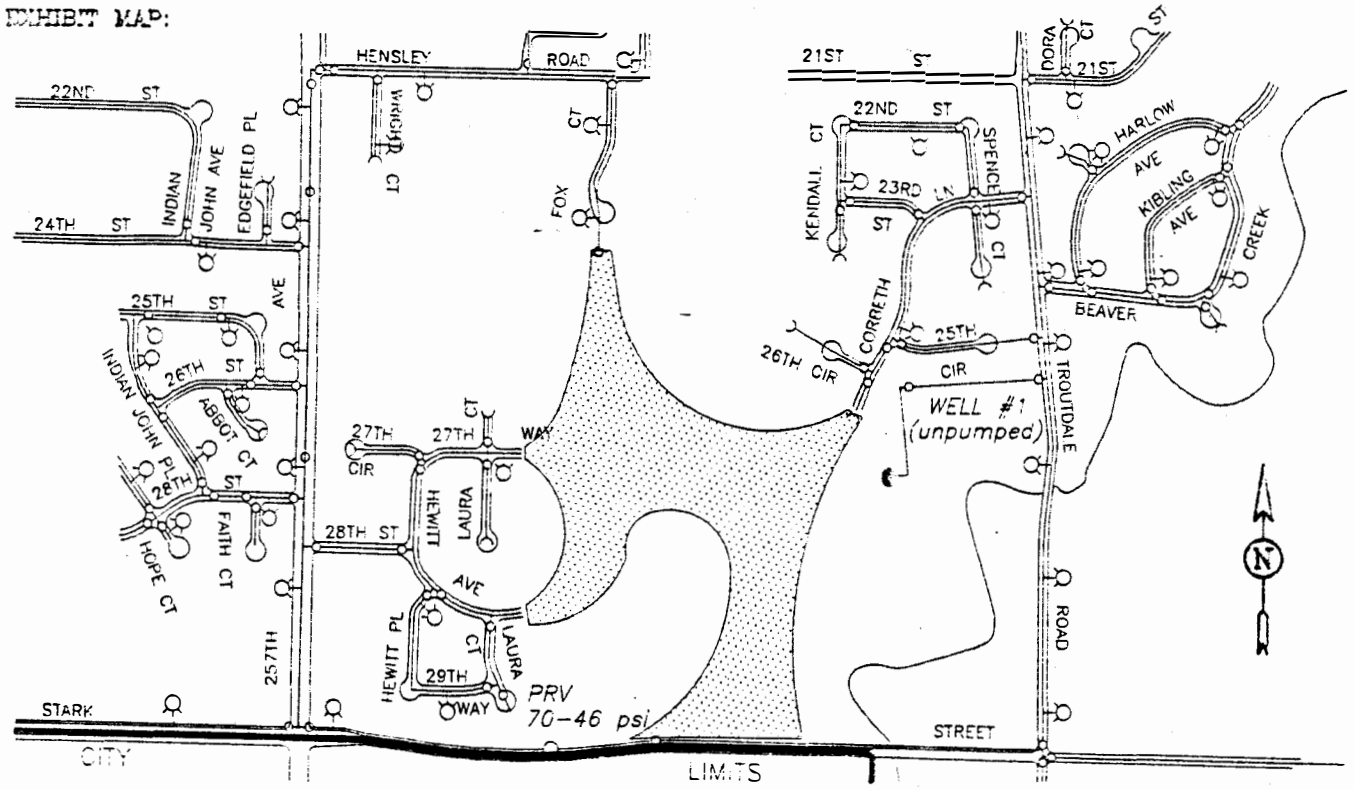
Project Justification/Benefit:

This project is required to serve domestic and fire flow needs of developable property.

Funding Notes:
This project would be funded entirely from benefiting property owners.

#34

EXHIBIT MAP:



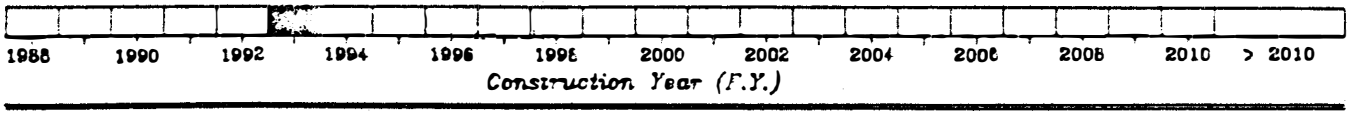
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #19

PROJECT: WELL #1 REHABILITATION

ESTM TOTAL PROJECT COST: $80,000



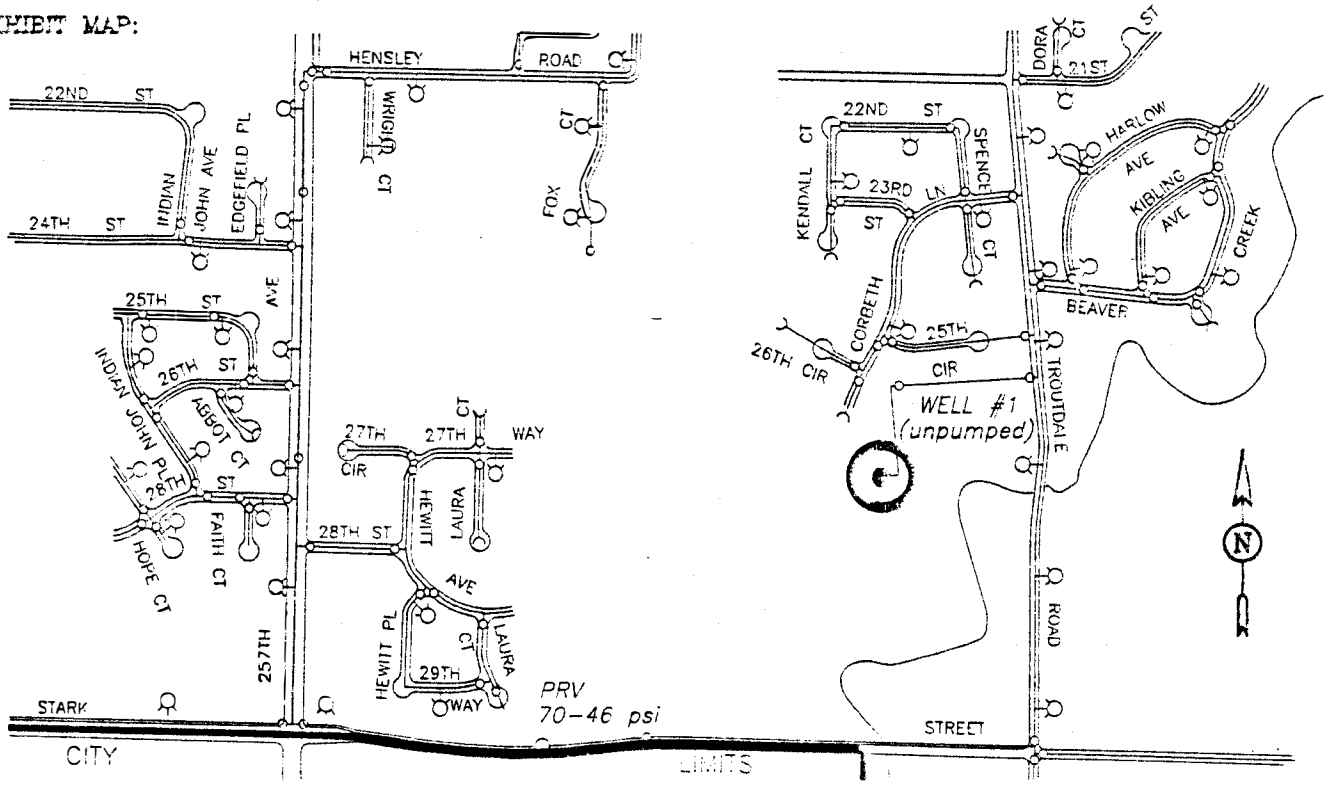
Project Description:
Well #1 was drilled in 1976 and subsequently re-drilled in 1978 due to unidentified aquifer failures. This project would first identify the feasibility of restoring the well (or re-drilling it in another location) and if feasible, provide the necessary effort and equipment to bring this facility back into the City's system.

Project Justification/Benefit:
As the City grows, both the need for additional supply and system redundancy is required. Well #1 supplies Pressure Zone II and subsequently II, IV and V as well. In addition, as in-fill development saturates Pressure Zone I, additional supply will be necessary and a booster facility(s) from Zone II to I will help meet those supply needs.

Funding Notes:
This project will be funded entirely from the Water Improvement Fund with resources derived from renewal and replacement set asides, and collected system development charges.

#14

EXHIBIT MAP:



CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #20

PROJECT: INTERNAL DEVELOPMENT WATER CORRIDOR NETWORK

ESTM TOTAL PROJECT COST: $150,000

1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 > 2010

Construction Year (F.Y.)

Project Description:
This project would construct 6" and 8" waterlines as necessary to serve any proposed development. These waterlines would make connections with Troutdale Road, Stark Street and other designated points within the existing water network. The project would consist of 6" and 8" waterlines as well as fire hydrants, valves and other incidental appurtenances.

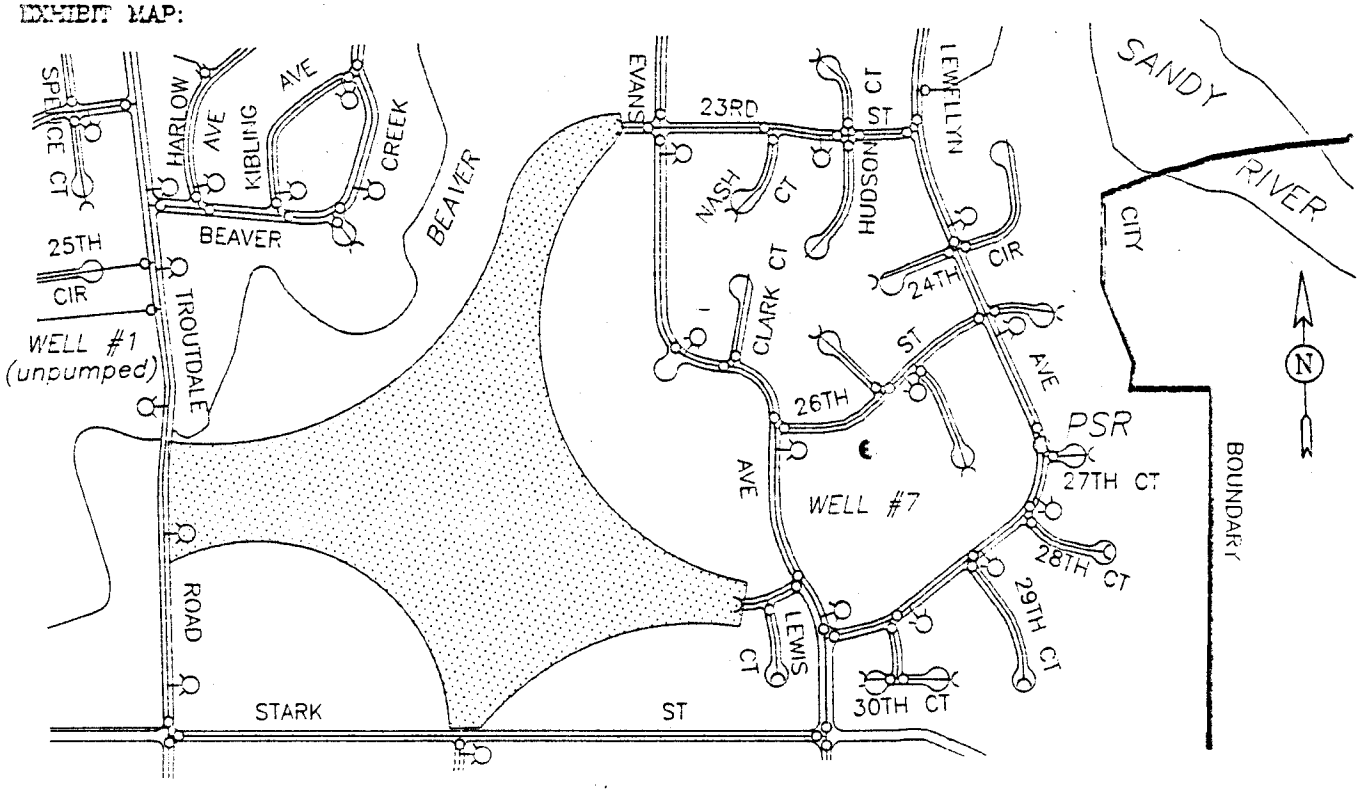
Project Justification/Benefit:

This project will be required to provide domestic and fire flow water for developable property.

Funding Notes:
This project(s) would be funded entirely the benefiting property owners.

#35

EXHIBIT MAP:



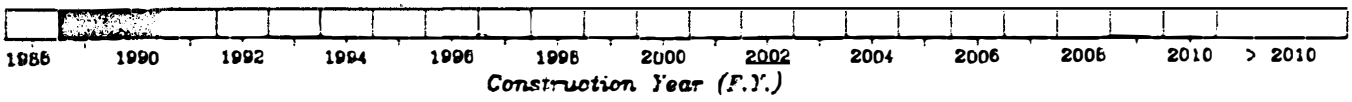
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #21

PROJECT: WELL #7 IMPROVEMENTS

ESTM TOTAL PROJECT COST: $130,000



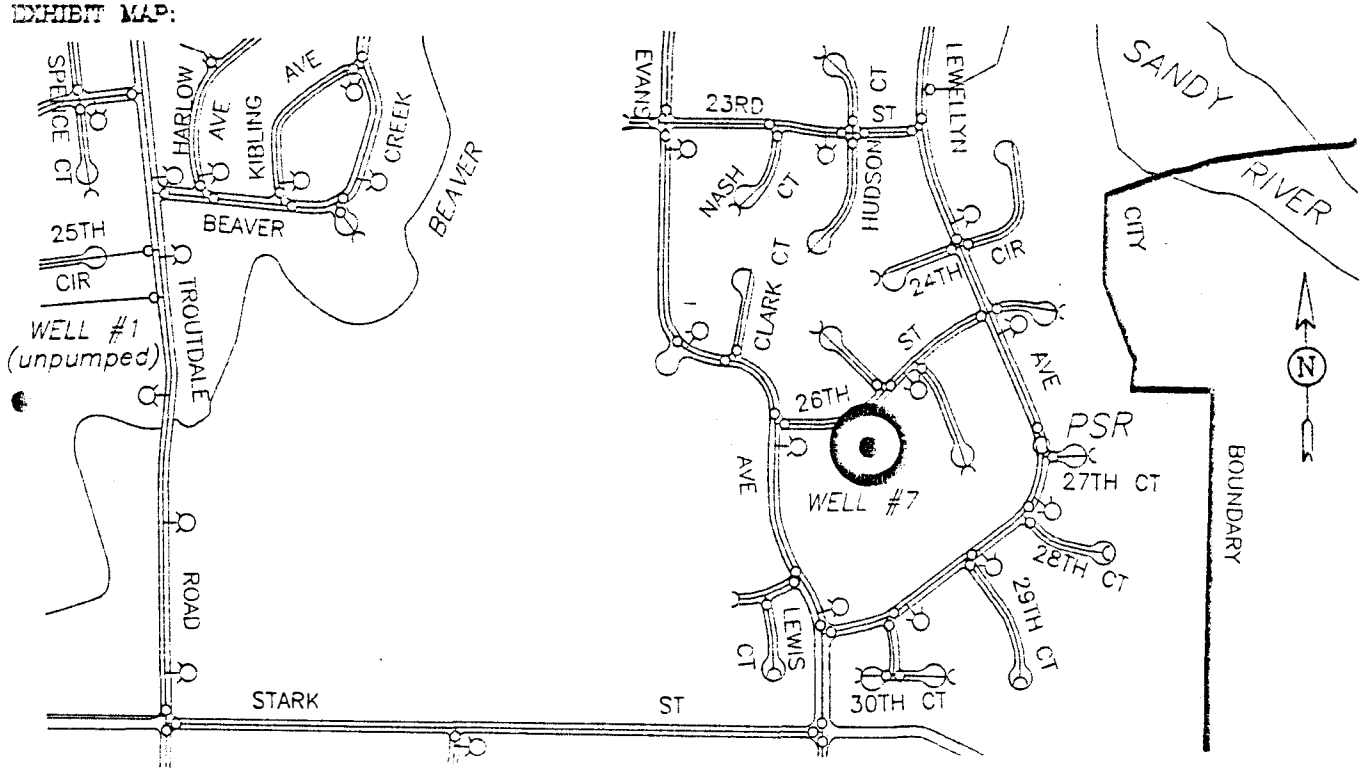
Project Description:
In 1980 Well #7 was drilled but was not completed. This project would finish the well and place it on line. The project will include a well house, pump, motor, control equipment, chlorinating facilities, well monitoring, telemetry, etc.

Project Justification/Benefit:
Pressure Zone II is the City's largest zone in both area and water consumption. It has the largest number of homes and is experiencing the most rapid residential growth as well. This project is needed in order to provide an alternate supply source if any of the other wells in the system fail. Water produced from this well will also supply Pressure Zone III, IV, and V, as may be needed.

Funding Notes:
This project will be funded entirely from the Water Improvement Fund, capital projects - primarily from the accumulated capital of system development charges.

#13

EXHIBIT MAP:



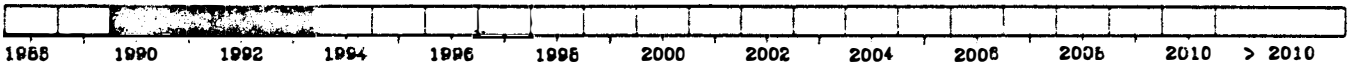
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #22

PROJECT: WATER LOOP

ESTM TOTAL PROJECT COST: $75,000



Project Description:

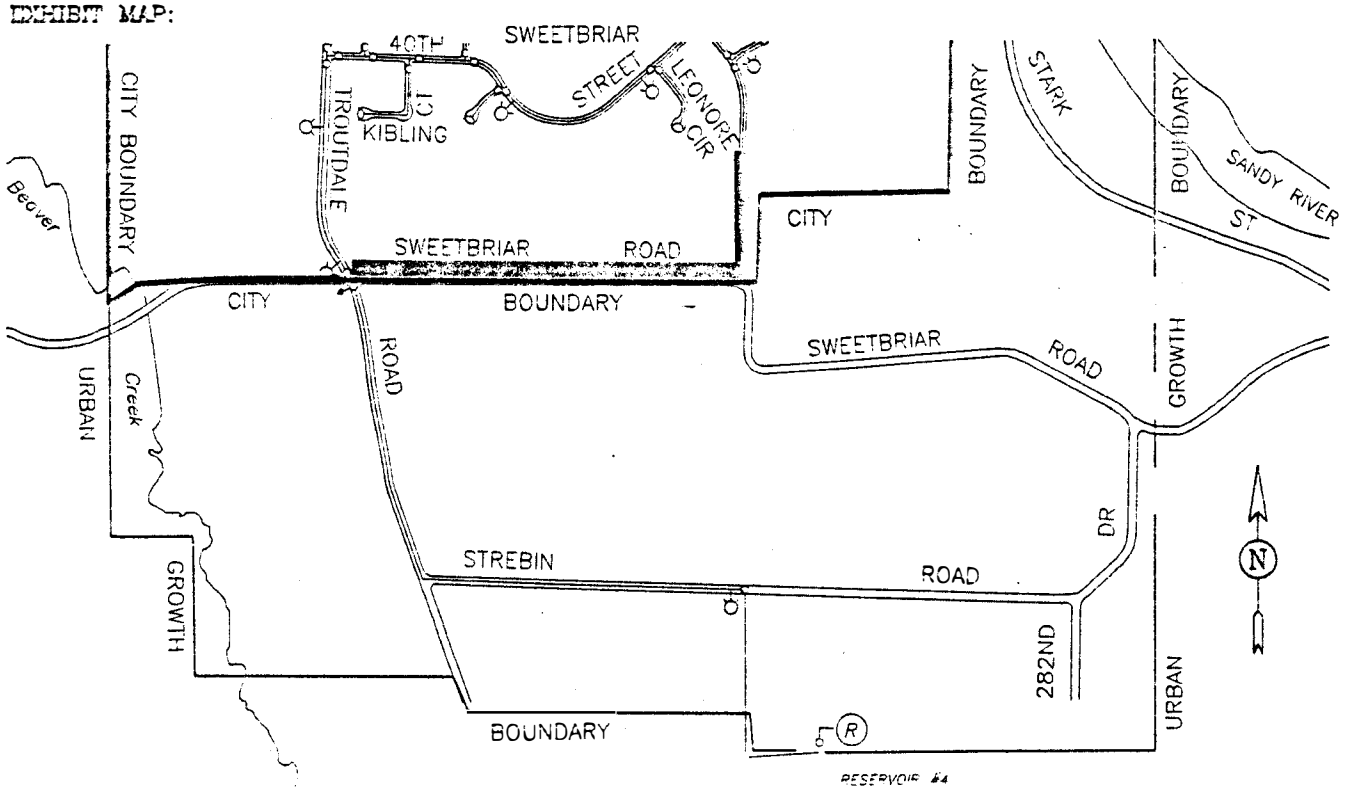
This project would construct 2400 feet of a 12" waterline together with fire hydrants, valves and other incidental appurtenances.

Project Justification/Benefit:
This project will be required to accommodate future residential development as well as providing system "looping." This project will eventual connect to other planned facilities and will become an important element in the system network.

Funding Notes:
This project would be funded jointly by the City (10%) and benefiting property owners (90%). The City's portion would be derived from the Water Improvement fund, primarily from system development charge resources.

#36

EXHIBIT MAP:



CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #23

PROJECT: SWEETBRIAR LINE RESERVOIR INTERCONNECT

ESTM TOTAL PROJECT COST: $85,000

1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 > 2010

Construction Year (F.Y.)

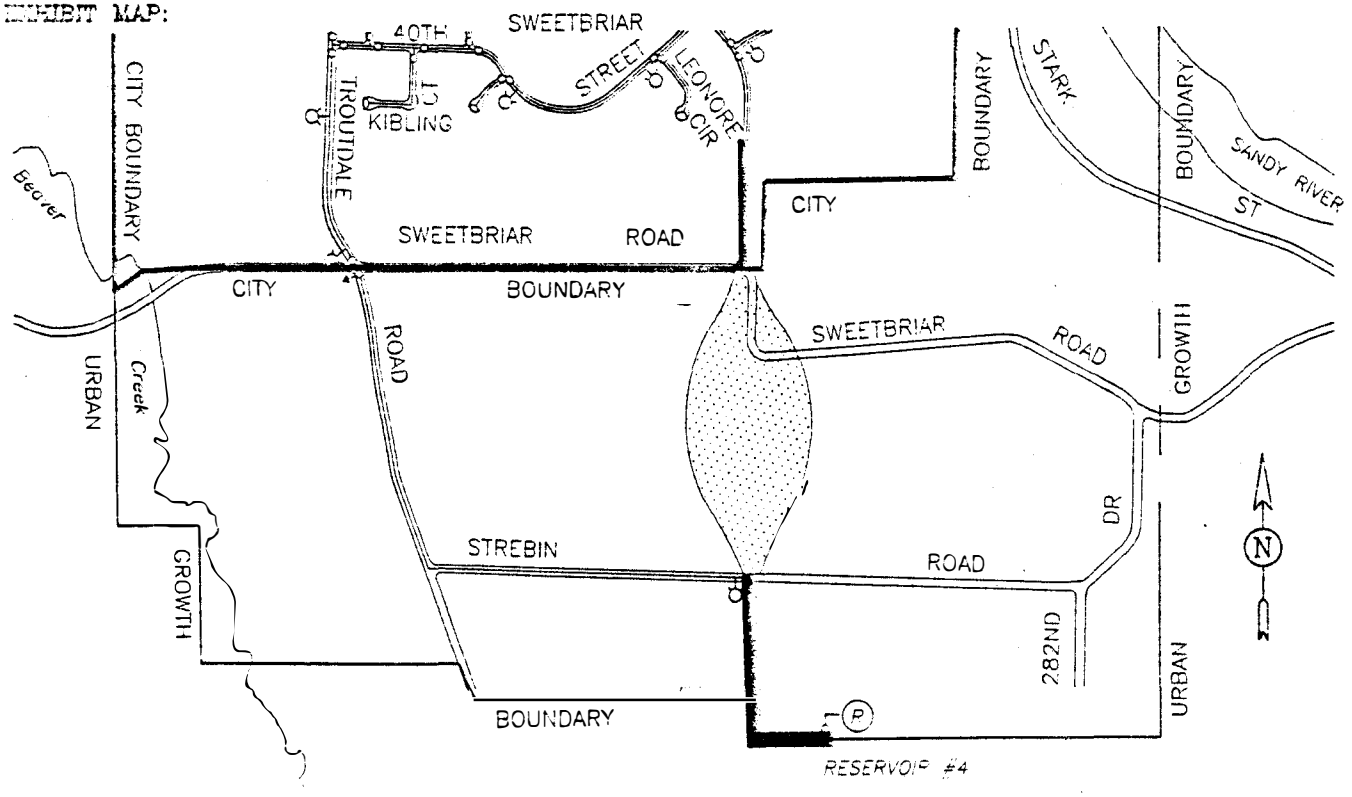
Project Description:
This project would construct 2500 feet of a 12" waterline, fire hydrants, valves and incidental appurtenances.

Project Justification/Benefit:
This project will be necessary for the distribution of water from reservoirs #4 and #7. It will provide some local benefit as development pressures dictate.

Funding Notes:
This project would be funded primarily from the City's Water Improvement Fund with system development charge as the primary financial resource.

#37

EXHIBIT MAP:



CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #24

PROJECT: WELL #5

ESTM TOTAL PROJECT COST: $185,000

1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 > 2010

Construction Year (F.Y.)

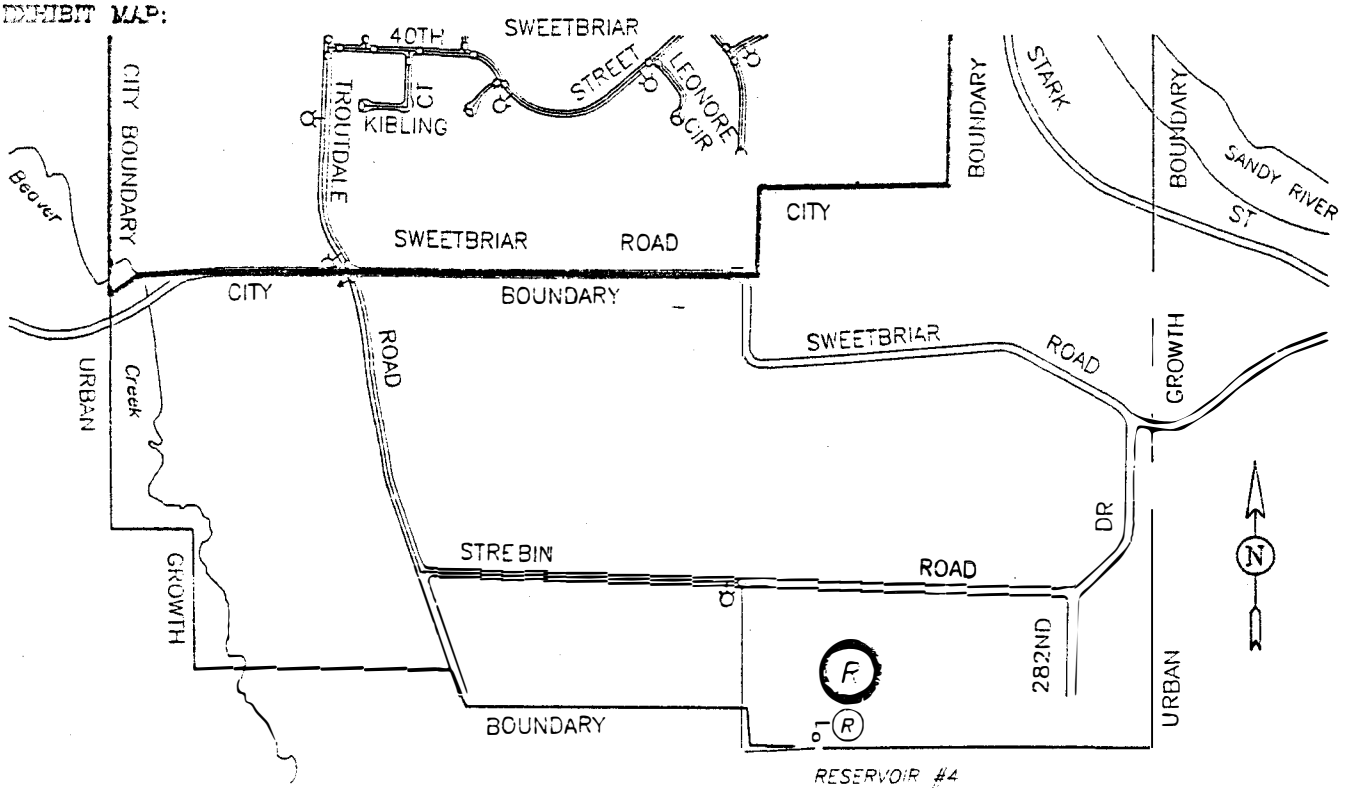
Project Description:
Earlier planning studies identified the long term need for Well #5 adjacent to Reservoir #4 (Strebin Road). This well would pump directly into a new four bay/reservoir rather than directly into the distribution system. The design capacity will be between 750 and 1,000 gallons per minute.

Project Justification/Benefit:
The growth and development pressures within Zones II, III, IV and V will require additional production, peaking reserve and fire flow demands. In addition, this new well will be isolated from direct discharge into the distribution system and its quality assurance therefore much higher.

Funding Notes:
This project will be funded via loans, grants, revenue bonds and/or capital monies from the Water Improvement Fund/SDC's.

#15

EXHIBIT MAP:



CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #25

PROJECT: RESERVOIR #7 (Strebin Road)

ESTM TOTAL PROJECT COST: $600,000

1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 > 2010

Construction Year (F.Y.)

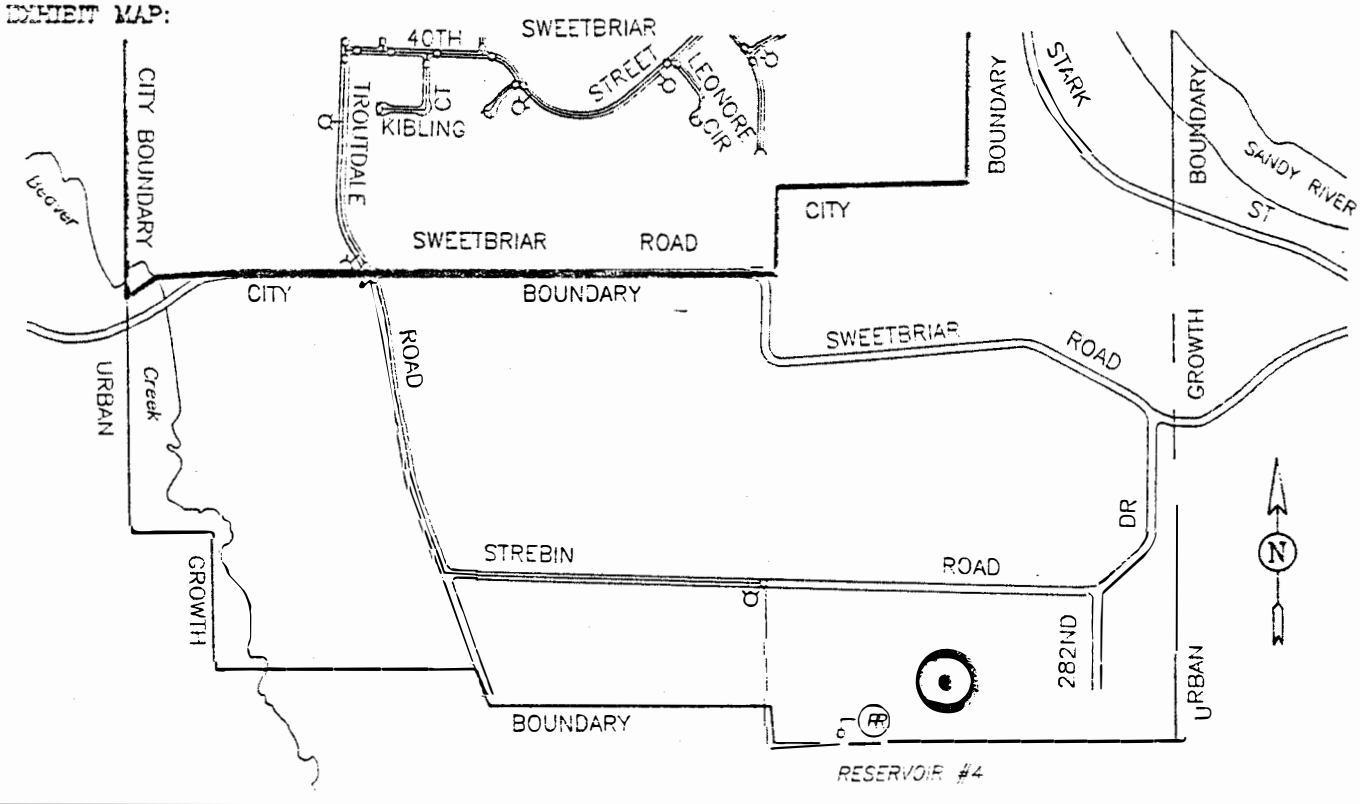
Project Description:
This project will construct a 2,000,000 gallon reservoir/four bay steel above ground structure.

Project Justification/Benefit:
Pressure Zone II serves Zones III, IV, and V and possibly Zone I through a booster facility. This very broad service need requires adequate and limited redundancy in both production and storage. In addition, this reservoir would provide well isolation from the rest of the system thereby affording an extra margin of public health, safety and allow for explicit treatment compliance to future EPA guidelines.

Funding Notes:
This project will be funded via loans, grants, revenue bonds and/or capital monies from the Water Improvement Fund/SDC's.

#18

EXHIBIT MAP:



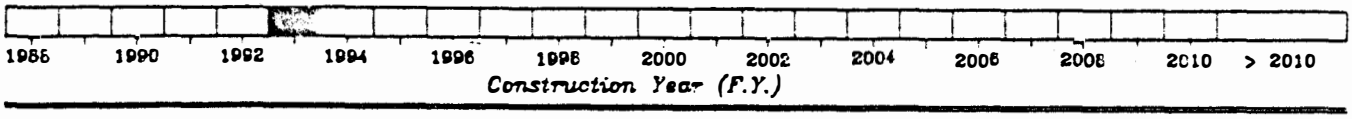
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #26

PROJECT: STARK STREET BOOSTER

ESTM TOTAL PROJECT COST: $50,000



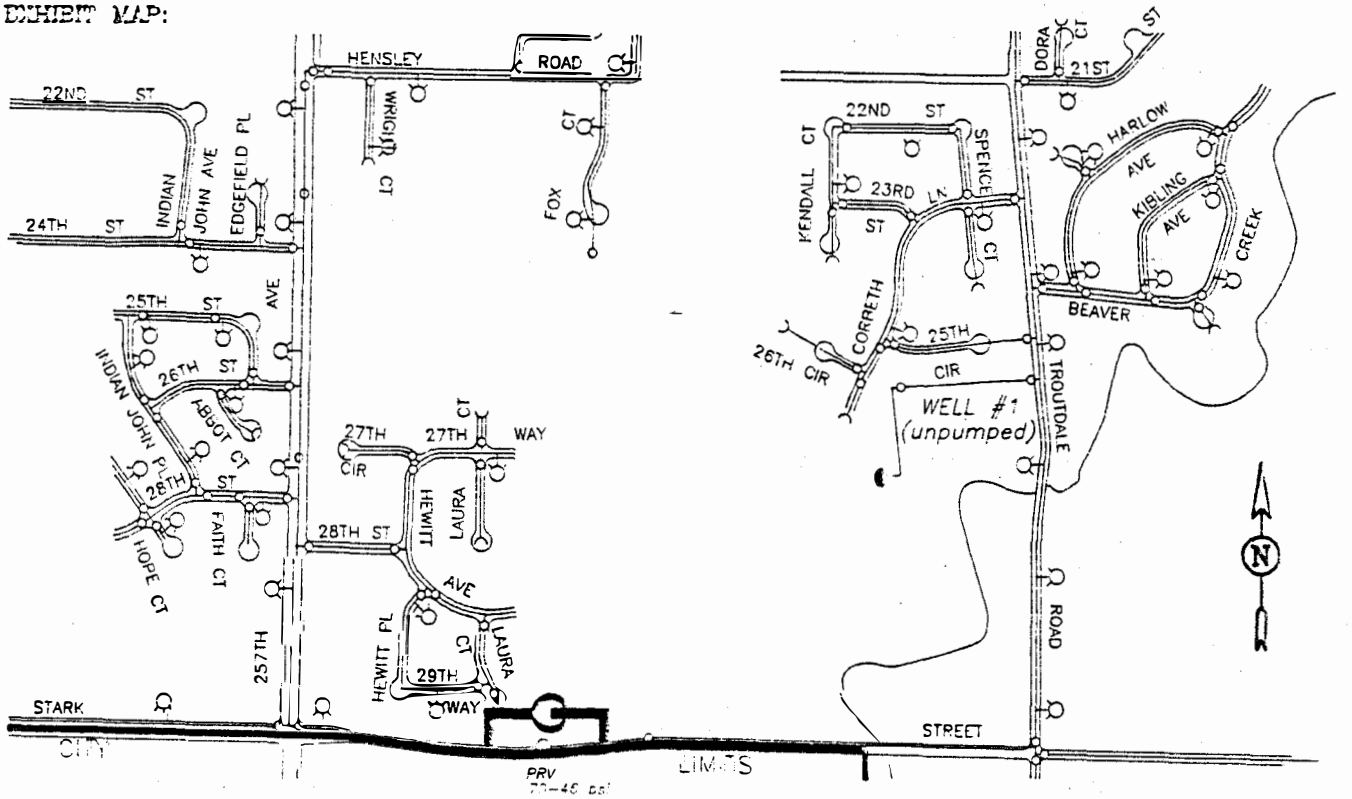
Project Description:
The project would construct a 500 gallon per minute booster facility to lift water from Zone II into Pressure Zone I.

Project Justification/Benefit:
This project will help provide needed and redundant supply to Pressure Zone I. It will provide peaking flows for the zone and will supply water to Reservoirs #2 and #6 as needed.

Funding Notes:
This project would be funded primarily from the City's Water Improvement Fund with system development charges as its primary resource.

#38

EXHIBIT MAP:



CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #27

PROJECT: NORTHWEST INDUSTRIAL AREA WATER NETWORK

ESTM TOTAL PROJECT COST: $130,000

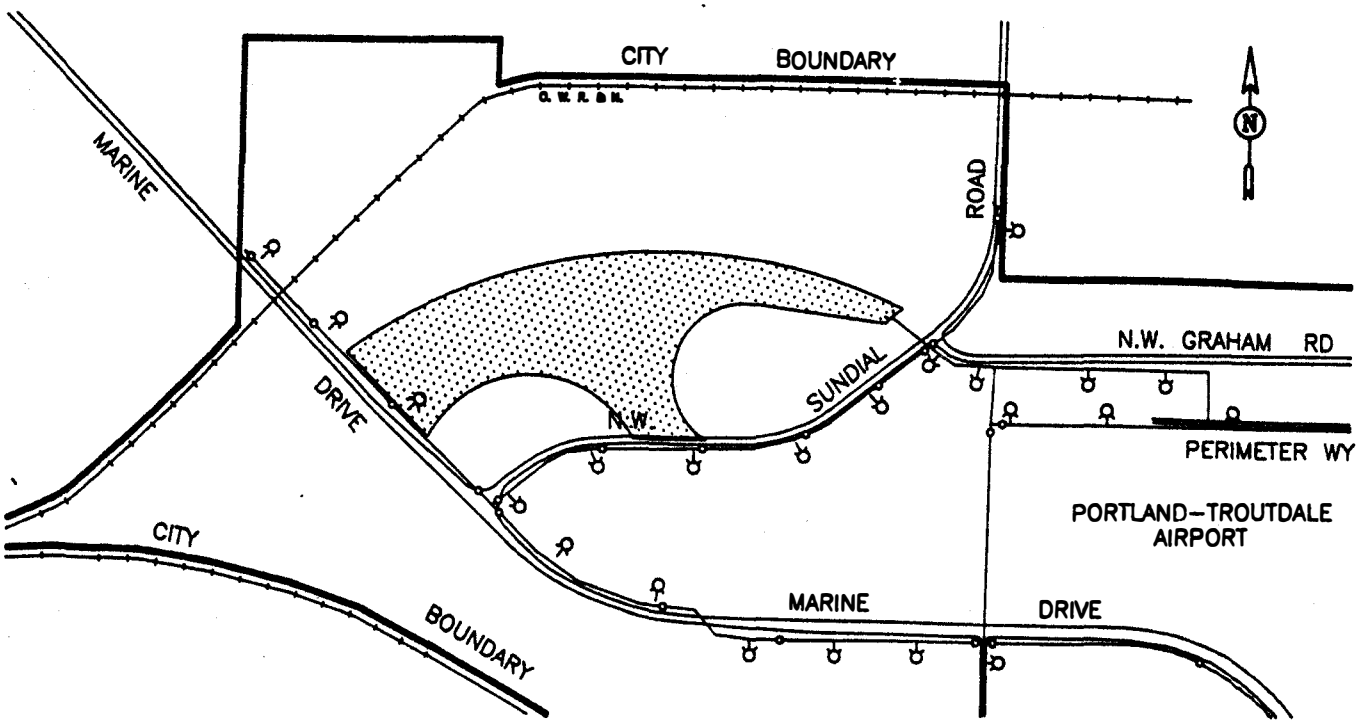
Project Description:
This project would construct 8", 10" and 12" waterlines together with fire hydrants, valves and necessary appurtenances to serve industrial development needs.

Project Justification/Benefit:
This project(s) will be required to provide domestic and fire flow protection for industrial properties.

Funding Notes:
This system would be constructed entirely from benefiting property owners.

#39

EXHIBIT MAP:



3.300 SANITARY SEWERAGE COLLECTION AND TREATMENT

.310 GENERAL

The City of Troutdale's wastewater collection and treatment system is generally in a good state of repair. There is no deferred maintenance and most improvement requirements are to accommodate additional demand from growth development pressures. Other projects needed are renewal and replacement as the life cycle of the facilities may require. Renewal and replacement projects are usually accompanied by facility component expansion as well paragraph. The City maintains full control of its wastewater collection, treatment and outfall systems. This control is mitigated by regulatory requirements. The City has consistently met or exceeded those requirements, and has not recorded treatment or discharge violations.

It has been the City's policy to respond to capacity increased requirements, both at the treatment plant and in the collection system, based on development pressures. the City has also maintained a general policy of advanced construction of major trunk, interceptor and treatment facilities necessary to encourage and/or anticipate growth. The cost of these facilities, when City funded, is supported by system development charges and money set aside for renewal and replacement.

Public Facilities Plans attempt to anticipate facility requirements with construction time-tables. Troutdale's policy, as mentioned previously, is primarily driven by the request for development or expansion. However, approximate time-lines can be set for treatment plant expansion, interceptor and trunk sewer construction based on demographic statistics. It is also possible to establish these construction schedules based upon maintenance requirements, regulatory changes and capacity enhancements through "deficiency" projects.

.320 COLLECTION SYSTEM

.321 GENERAL

It will be necessary to extend the City's collection system to accommodate new subdivisions, proposed industrial facilities, commercial sites, etc. There have been no identified areas requiring

size upgrades in the collection system. However, there are some trunk lines in the system that may reach capacity and need to be upgraded depending on the type and demands generated by future development.

.322 COLLECTOR TRUNK & INTERCEPTOR LINES

The collector and trunk facilities will be extended to accommodate new development and properties within our "208" service boundaries. These boundaries are identified on the map "Sanitary Sewer System-Public Facilities" and are depicted by the future City boundary line. The improvements and extension to these facilities is identified on the following project Public Facilities plan/data sheets.

.323 PUMP STATIONS

The City's existing pump stations will be improved and modified as necessary to meet increases in flow and/or increases due to new development. Additional pump stations will be constructed where gravity systems are not possible. The life cycle value of pumping facilities will be compared to the cost of providing gravity systems or non-traditional disposal and collection methods. The projects anticipated under this plan are identified on the map "Sanitary Sewer System-Public Facilities" and the appropriate detail is identified on the following Public Facilities Plan/data sheets.

3.330 TREATMENT SYSTEMS

.331 GENERAL

The City of Troutdale's wastewater collection, treatment and outfall system has a current capacity of 1.6 million gallons per day. This capacity is restricted by the capacity of the treatment plant which also has a peaking design capacity of 3.2 million gallons per day. The system generally operates at 70-80 percent level of capacity.

The City has entered into a preliminary design study contract with a consulting engineer to address our wastewater treatment plant expansion needs. This preliminary study is expected to be completed and accepted by the City, by June 30, 1990. The results of this study will be integrated into a revised version of the Public Facilities

Plan and included in the City's Capital Improvement Program document as well.

.332 PLANT

As mentioned earlier, the City is currently involved in the preparation of a pre-design study for treatment plant expansion and sludge disposal facilities. However, the preliminary draft of this study estimates that approximately 4.7 million dollars of treatment plant improvements will be required to accommodate our 2010 treatment systems demands. Some of these costs are necessary to accommodate growth, others to accommodate changes in regulatory requirements.

Most of the anticipated cost requirements for expansion are tied to construction of two aerobic digestors, and other sludge handling facilities.

The final pre-design study document conclusions and recommendations will be included in a modified Public Facilities Plan when they are available. In addition, the recommendation details will be included in the City's Capital Improvement Program.

3.340 OUTFALL AND SLUDGE DISPOSAL

.341 GENERAL

The City discharges its non-sludge liquid into the Sandy River under DEQ permit #. This 27 inch outfall and River embankment protection facility is generally in good condition. There is no deferred maintenance on the outfall pipe and manhole system and little deferred maintenance on the river embankment protection.

.342 The 27 inch outfall facility is adequate for current and projected future needs. However, as regulatory requirements change, and as Sandy River embankment erosion dictates, improvements and/or relocations may be necessary. They are not accommodated for in this plan and will be addressed as renewal/replacement rather than expansion types of projects.

.343 SLUDGE DISPOSAL

The City currently disposes of its treatment plant sludge by way of land application under NPDES permit #. The current treatment facility generates more sludge per capita than will the expanded

facility currently under pre-design analysis, and as described in Section 3.330, and as a result will require less intense land application provisions.

The disposal of wastewater sludge, however, will continue to be an expensive operational cost for the facility and one subject to rapidly changing regulatory requirements. The volatility of EPA and DEQ regulations make it very difficult to project sludge handling facilities and sludge handling methods costs. However, we believe that there are substantial environmental benefits from the land application of wastewater sludge if it is conducted within appropriate guidelines. The City may find it necessary to secure long term property leases and/or property ownerships to address its sludge handling and disposal requirements. There are no costs estimates or plans provided in this public Facilities document (outside of the sludge handling facilities at the treatment plant) to address these unknowns. Many of them will be dealt with as operational/maintenance issues rather than through the capital expansion of facilities.

CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #1

PROJECT: FRONTAGE ROAD PUMP STATION UPGRADE

ESTM TOTAL PROJECT COST: $55,000

1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 > 2010

Construction Year (F.Y.)

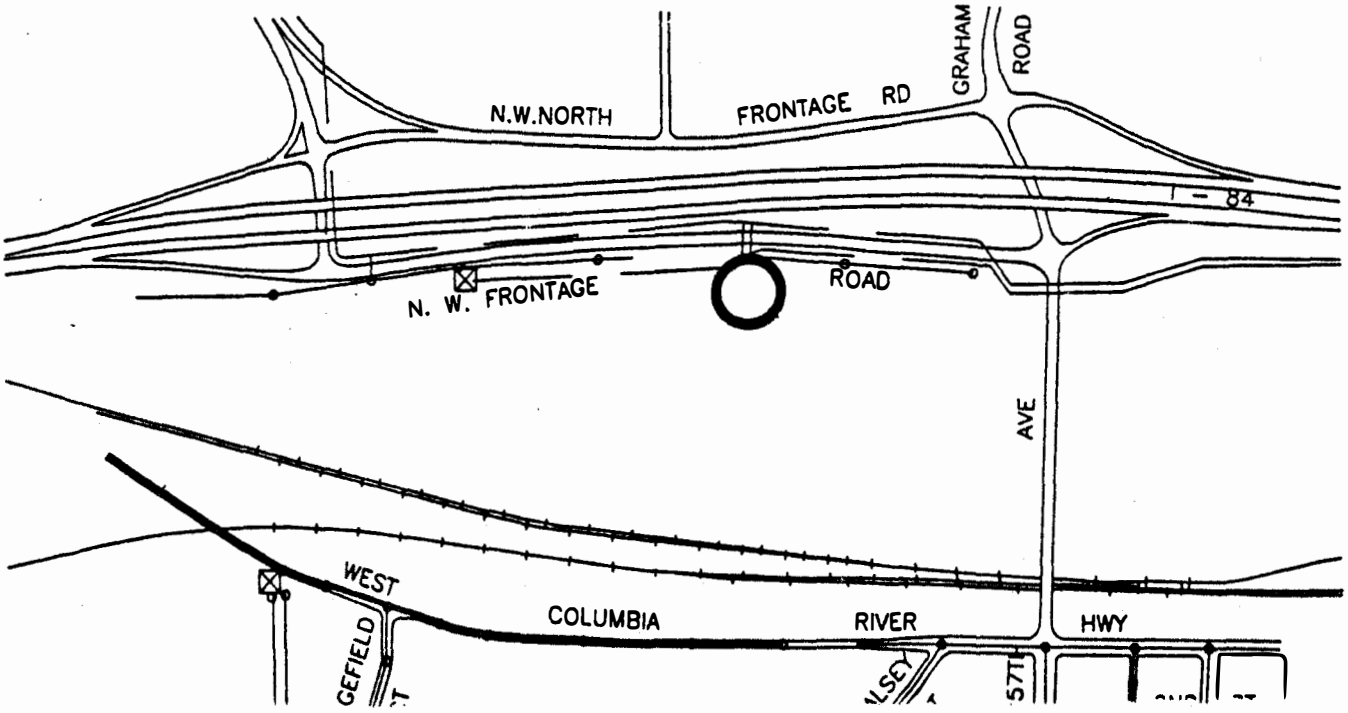
Project Description:
This project would remove and replace the existing Frontage Road pump station with a new facility having adequate capacity and satisfactory operations and maintenance costs. It would also construct a 1.2 MGD capacity pump station, together with the electrical, pumps, motor, control and telemetry equipment, and install new force main valves and appurtenances.

Project Justification/Benefit:
The commercial area along the I-84 Frontage Road is rapidly growing. In addition, the existing pump station has a history system failures and high maintenance costs. These two factors require the upgrade or replacement of the existing facility.

Funding Notes:
This project would be funded from the Sewer Improvement Fund with resource monies from both SDC collection and renewal and replacement contributions.

#41

EXHIBIT MAP:



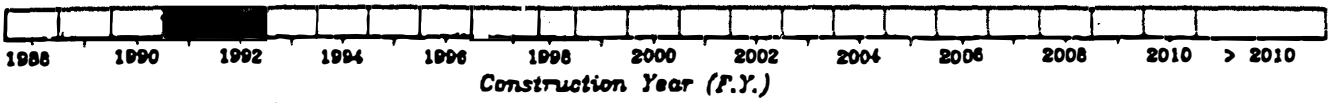
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #2

PROJECT: GRAHAM ROAD SEWER EXTENSION

ESTM TOTAL PROJECT COST: $63,000



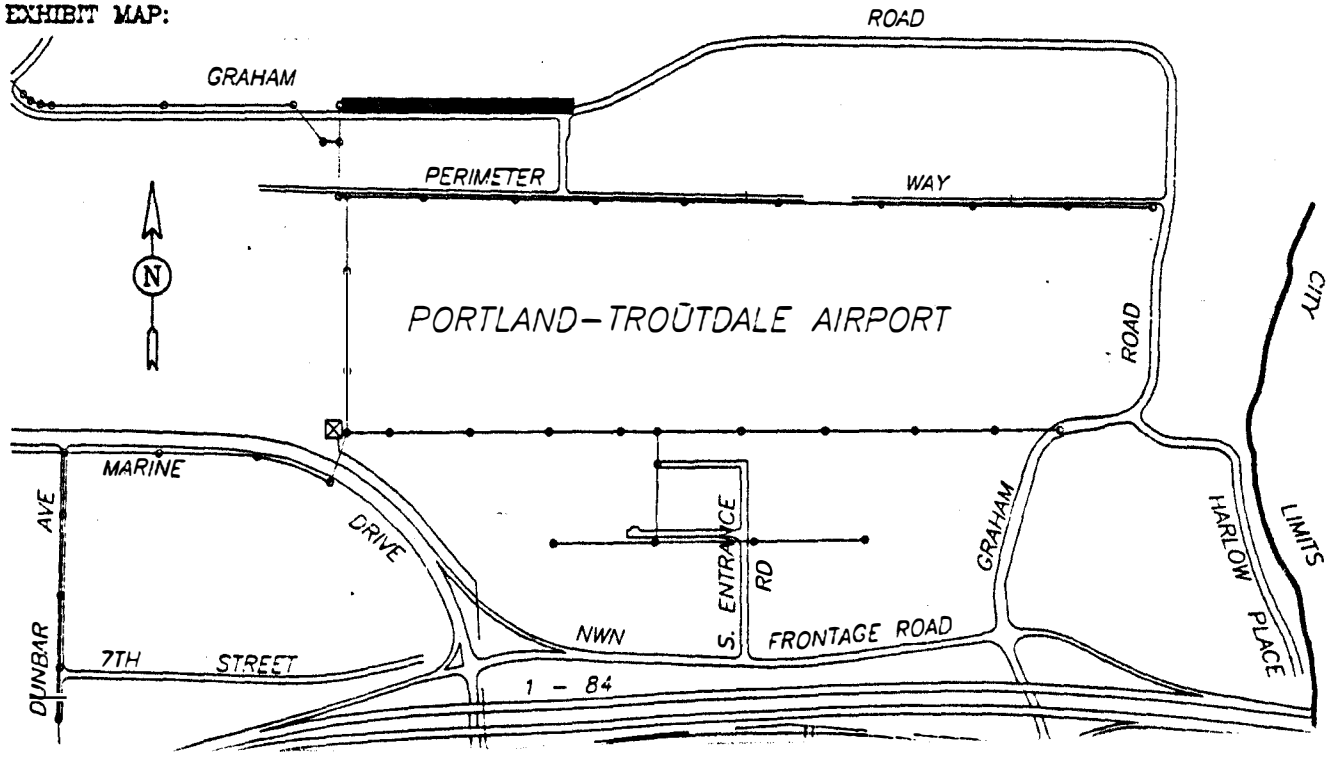
Project Description:
Extend the Graham Road sewer east from an existing manhole approximately 1450 feet. This gravity sewer would be 8" and contain manholes, cleanouts and other appurtenance incidental to the construction requirement.

Project Justification/Benefit:
The Port of Portland's industrial area is growing and developing rapidly. In order to accommodate this development and provide needed service, the construction of these facilities is required.

Funding Notes:
This project would be funded entirely by the Port of Portland.

#42

EXHIBIT MAP:



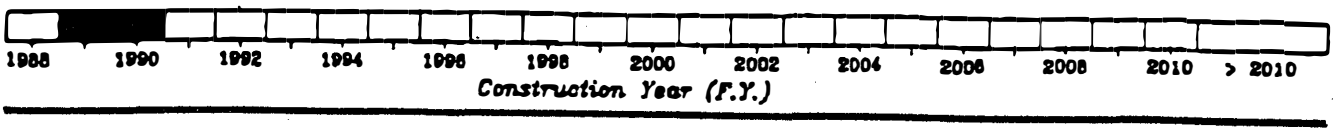
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #3

PROJECT: SUNDIAL ROAD SEWER EXTENSION AND PUMP STATION

ESTM TOTAL PROJECT COST: $175,000



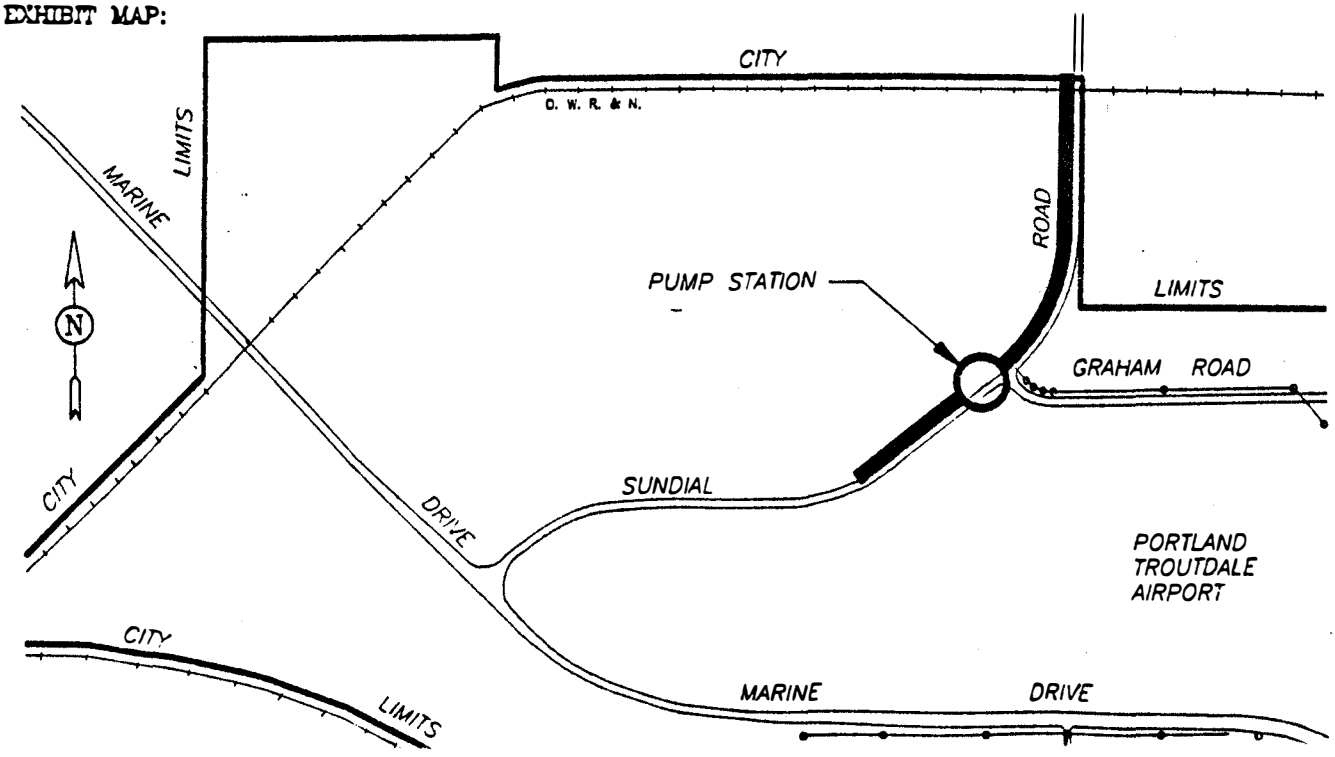
Project Description:
This project would construct 1800 feet of 8" sanitary sewerline, 100 feet of 4" sanitary sewer force main and construct one 600 gpm underground duplex pump station.

Project Justification/Benefit:
This project will serve a rapidly developing industrial area and allow timely development accordingly. It will benefit areas zoned for industrial uses within the City of Troutdale and provide a connecting point for future service as annexation takes place along the City's northern boundaries.

Funding Notes:
This project will be funded entirely by the benefiting property owners through a local improvement district, or other funding mechanisms.

#43

EXHIBIT MAP:



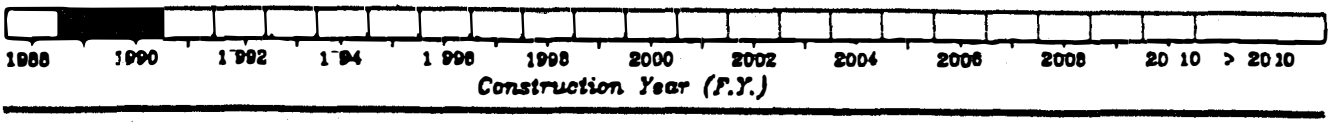
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #4

PROJECT: MARINE DRIVE/SUNDIAL ROAD SANITARY SEWER EXTENSION
PUMP STATION CONSTRUCTION

ESTM TOTAL PROJECT COST: $275,000



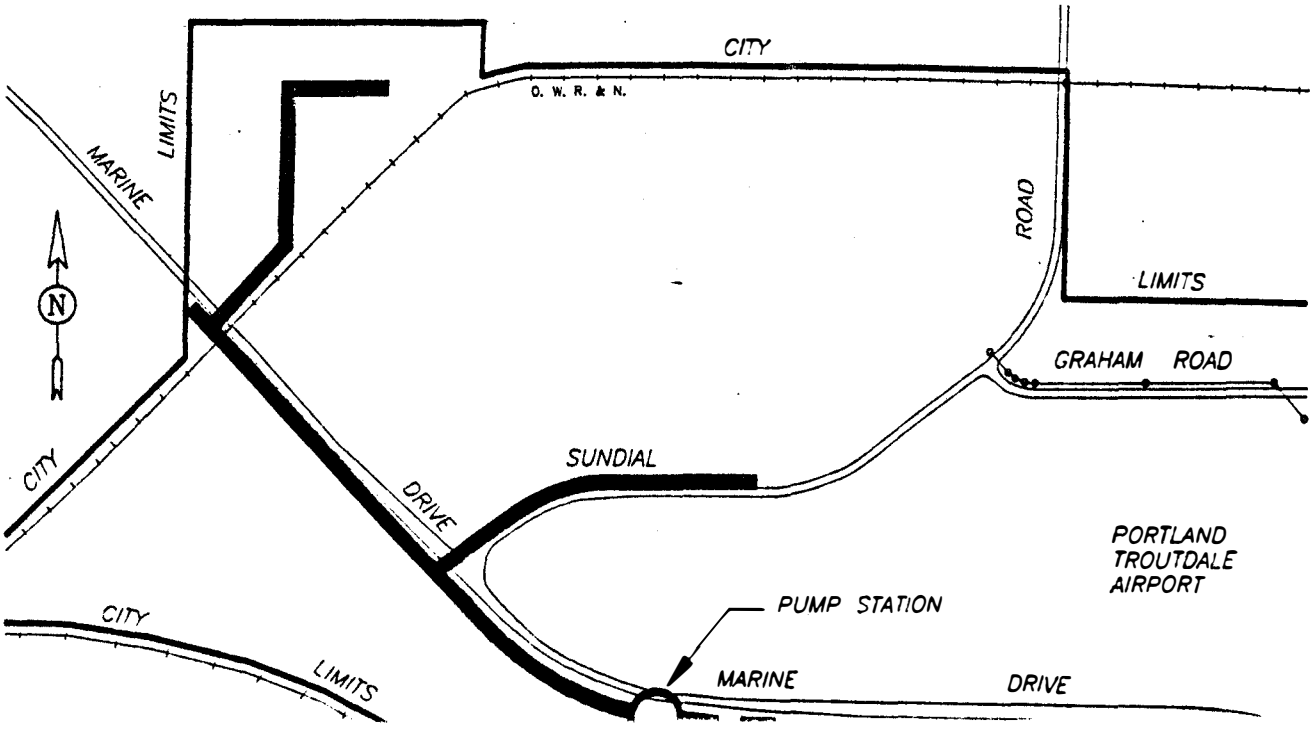
Project Description:
This project constructs 5300 feet of 8" gravity sanitary sewer main, 400 feet of 4" sanitary sewer force main, and one blank gpm underground duplex pump station.

Project Justification/Benefit:
This project will serve a rapidly growing industrial base in the northwest area of the City. It will provide benefits to those properties by making available gravity sewer service for industrial and domestic uses.

Funding Notes:
This project will be funded entirely by the benefiting property owners either through direct cash contribution, local improvement districts, or other approved funding mechanisms.

#44

EXHIBIT MAP:



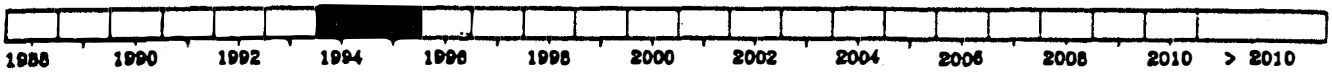
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #5

PROJECT: BEAVER CREEK PUMP STATION UPGRADE/REPLACEMENT

ESTM TOTAL PROJECT COST: $90,000



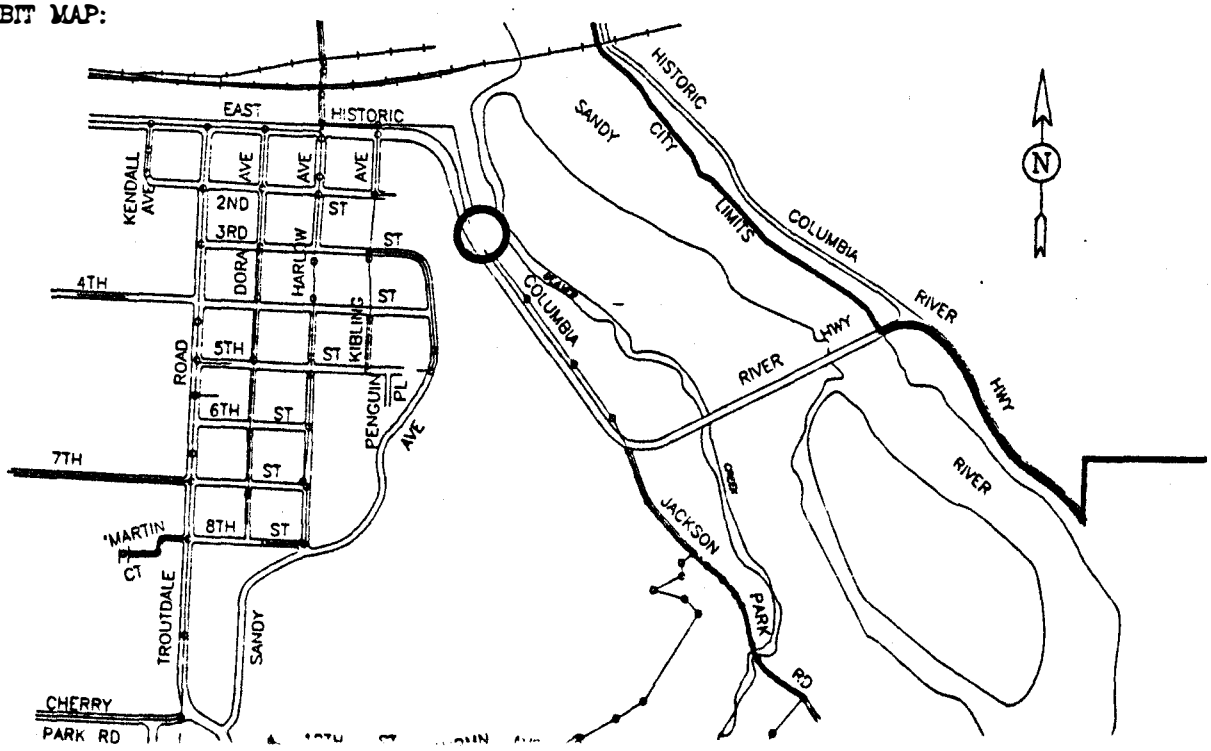
Project Description:
This project would upgrade or construct a new pump station having a design capacity of 1.5 MGD.

Project Justification/Benefit:
This pump station will replace or add to the existing Beaver Creek Pump Station. It will be needed to provide continuing service as expansion takes place in drainage basin "C", and as an outright requirement if service is going to be provided to Troutdale east of the Sandy River. The existing pump station most likely will be retained to provide as an emergency backup for basin "C", all of which requires pumping.

Funding Notes:
This project would be funded cooperatively by benefiting private property owners and by the City in proportion to the renewal and replacement requirements. The source of funds would be the Sewer Improvement Fund with resources targeted from system development charges and renew and replacement set asides.

#45

EXHIBIT MAP:



CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #6

PROJECT: BEAVER CREEK TRUNK SEWERLINE CONSTRUCTION

ESTM TOTAL PROJECT COST: $80,000

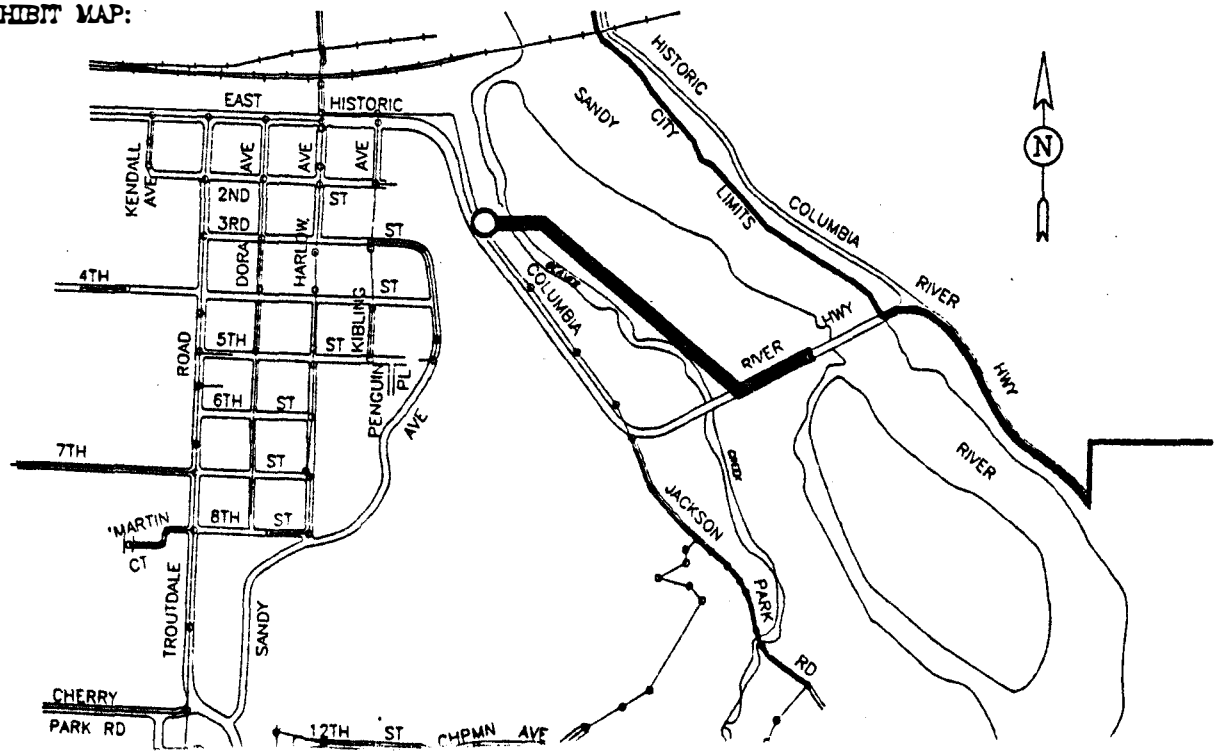
Project Description:
This project would construct 1700 feet of 10" gravity sanitary sewer, manholes, cleanouts and other appurtenances incidental to the project.

Project Justification/Benefit:
This project would provide gravity sewer service for the property east of Beaver Creek, west of the Sandy River and north of the Historic Columbia River Highway. In addition, it may serve as an interceptor sewer for properties east of the Sandy River. The property is currently unserved and any development will require service projects.

Funding Notes:
Funding will be provided by benefiting property owners (90%) and the City of Troutdale (10%). City sources would be from the Sewer Improvement Fund. The City's contribution would be for oversizing and use by City facilities (park).

#46

EXHIBIT MAP:



CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #7

PROJECT: EAST TROUTDALE FORCE MAIN/STEP SANITARY SEWER SYSTEM

ESTM TOTAL PROJECT COST: $250,000

1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 > 2010

Construction Year (F.Y.)

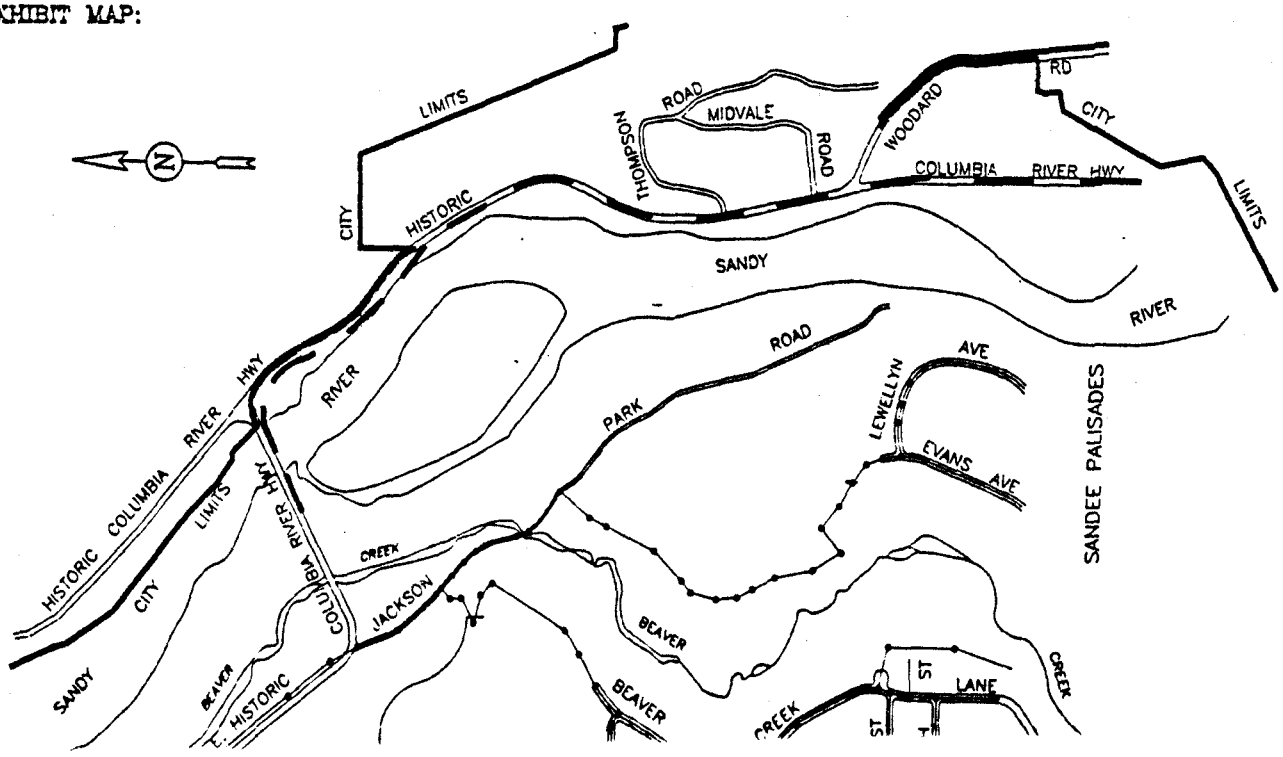
Project Description:
This project would construct 2000 feet of 4" sewer force main together with valves, pigports, cleanouts, 3500 feet of 10" gravity sewerlines, and other incidentals to the project.

Project Justification/Benefit:
All properties within the City of Troutdale limits, east of the Sandy River, currently are not served by a public sanitary sewer system. Some are experiencing cesspool/septic tank/drain field failures and are under order from the Oregon Department of Environmental Quality to connect to a public system or find an acceptable alternate means of wastewater collection, treatment and disposal. This project would benefit all owners of property in the east Troutdale drainage basin and provide service for each as required.

Funding Notes:
This project would be funded by benefiting local property owners, possibly through the local improvement district process.

#47

EXHIBIT MAP:



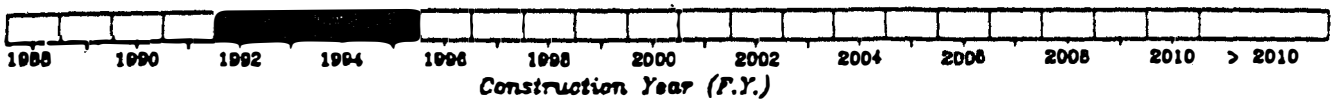
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #8

PROJECT: STARK STREET SEWER CONNECTORS

ESTM TOTAL PROJECT COST: $75,000



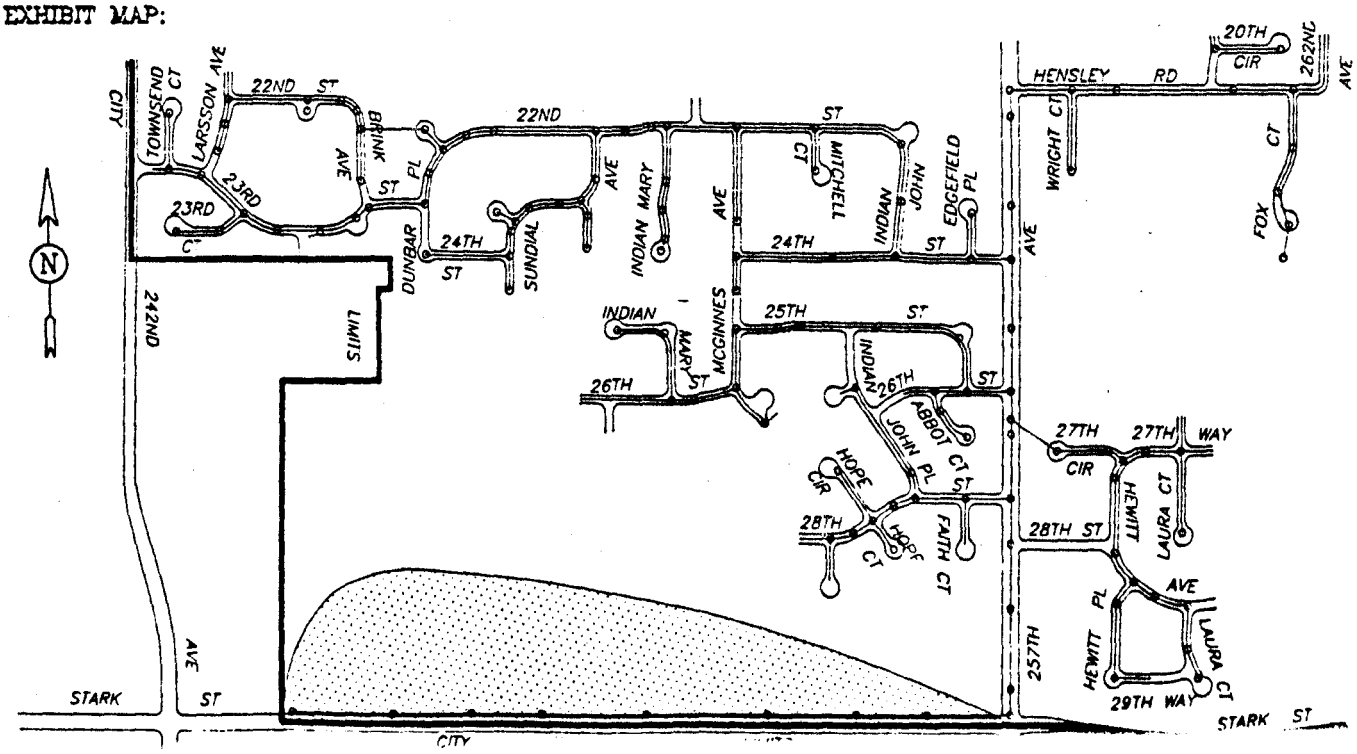
Project Description:
This project would construct an unknown quantity of 6" sanitary sewerline, manholes, cleanouts and other appurtenances incidental to the construction project.

Project Justification/Benefit:
This project is development driven and would supply sanitary sewer service to properties north of Start Street in both commercial and residential areas.

Funding Notes:
This project needs to be funded entirely from benefiting property owners, and any oversizing requirements would involve City participation. Any funds derived from City participation would be from the Sewer Improvement Fund with resources generally from system development charges.

#48

EXHIBIT MAP:



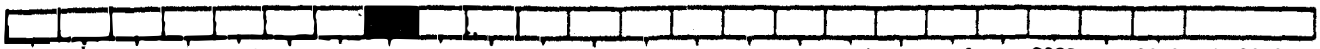
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #9

PROJECT: JACKSON PARK SANITARY SEWER EXTENSION AND PUMP STATION

ESTM TOTAL PROJECT COST: $100,000



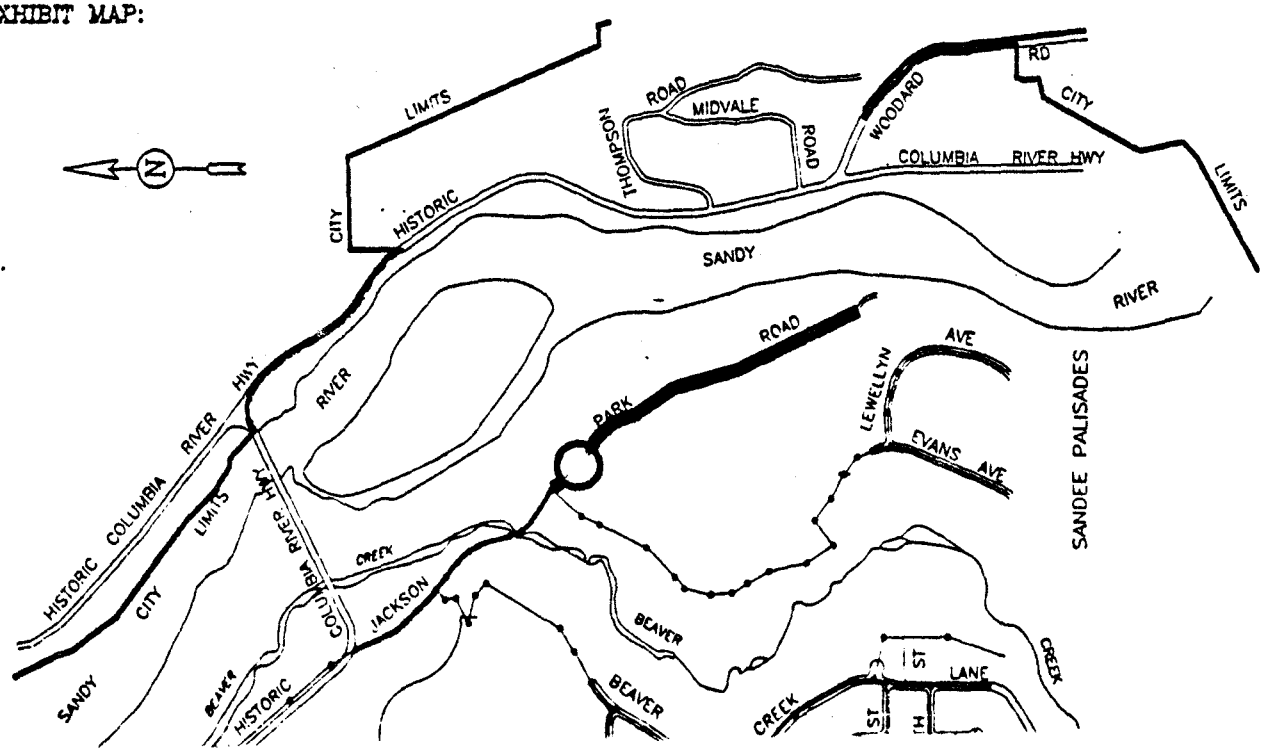
Project Description:
This project would construct 1700 feet of 8" gravity sewerline, 300 feet of 4" force main and a 30 gpm duplex pump station.

Project Justification/Benefit:
The Jackson Park area of Troutdale currently is not served by public sewer systems and has regulatory requirements change and/or existing cesspools, septic tanks and drain fields fail, a public system will be required. This project will benefit the residential properties along Jackson Park Road from the Beaver Creek interceptor southeast of its end point.

Funding Notes:
This project would be funded by benefiting property owners and would involve no City participation.

#49

EXHIBIT MAP:



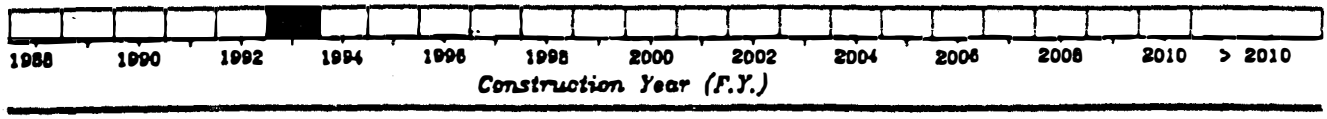
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #10

PROJECT: CHERRY PARK SANITARY SEWER EXTENSION

ESTM TOTAL PROJECT COST: $95,000



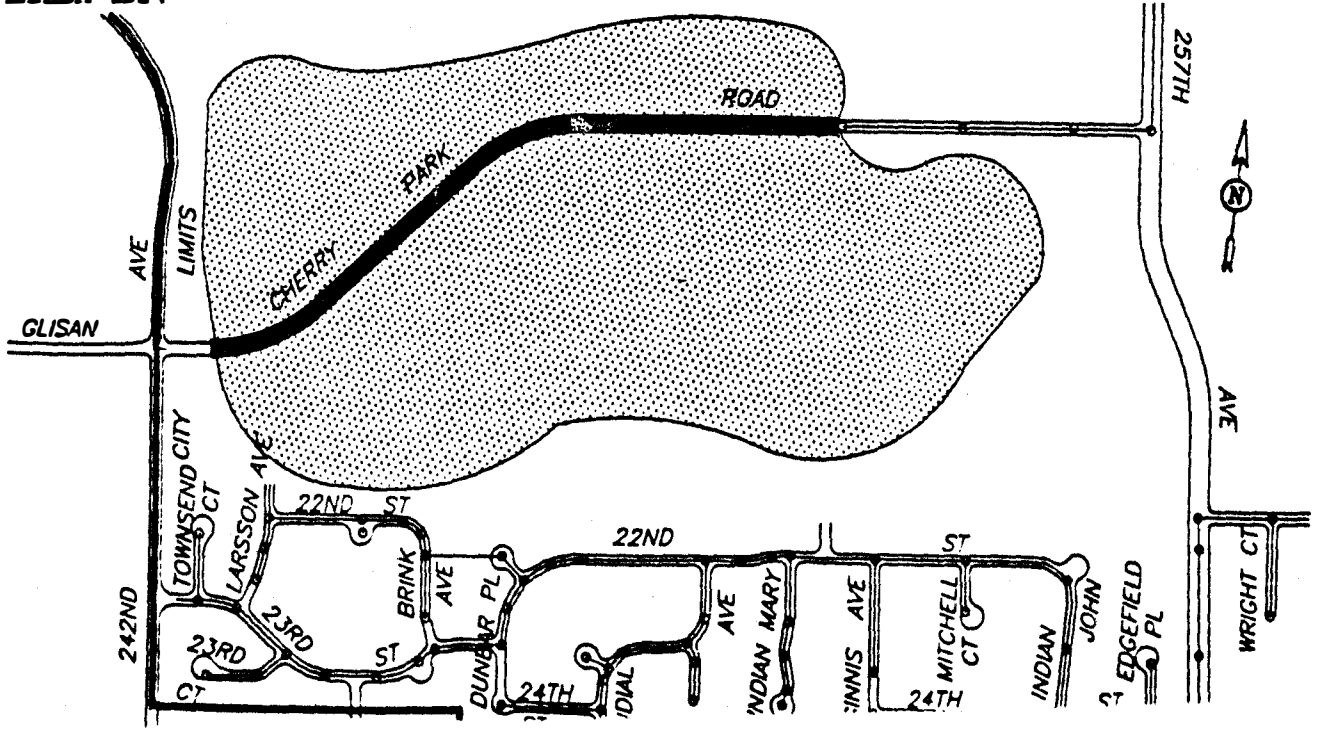
Project Description:
This project would construct approximately 2200 feet of 8" and 10" gravity sewerline (unknown quantities of connecting sewerlines) together with manholes, cleanouts and other appurtenance incidential to the project. Additional construction within the drainage service areais also included in this project.

Project Justification/Benefit:
This project is required to provide service to the area identified on the exhibit map. Development projects will dictate service and facility construction.

Funding Notes:
This would be funded entirely by benefiting property owners.

#50

EXHIBIT MAP:



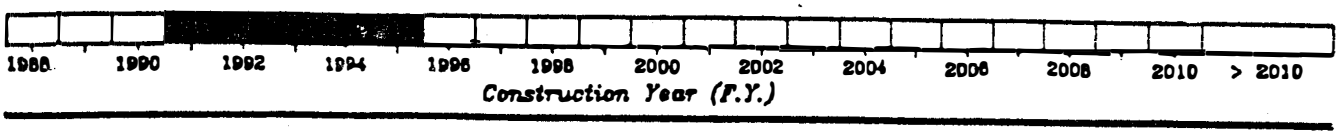
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #11

PROJECT: MARINE DRIVE SANITARY SEWER COLLECTION NETWORK

ESTM TOTAL PROJECT COST: $250,000



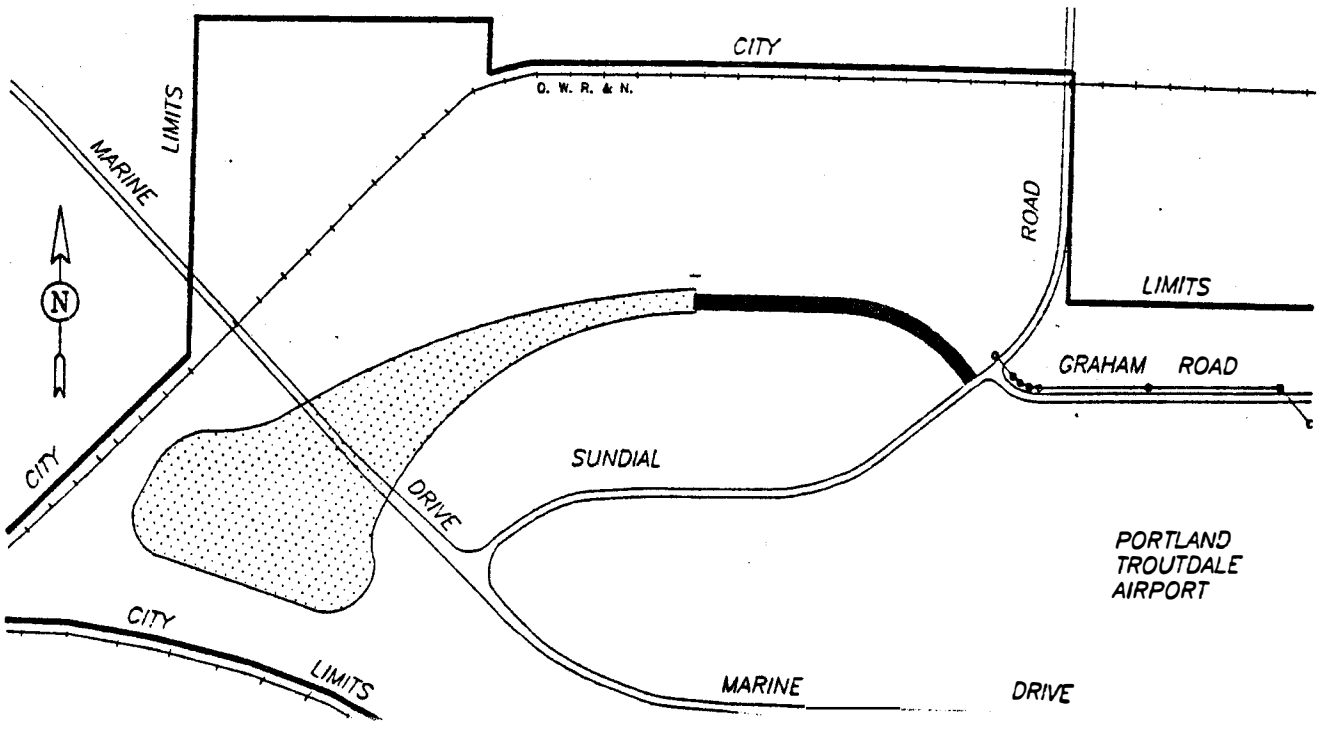
Project Description:
This project will construct a collector and lateral system composed of 4", 6" and 8" pipe together with manholes, cleanouts and other appurtenances incidental to the project.

Project Justification/Benefit:
This development driven project will benefit industrial areas by providing a collector and lateral system that would tie to the Marine Drive trunk sewerline.

Funding Notes:
This project would be funded entirely by benefiting property owners.

#51

EXHIBIT MAP:



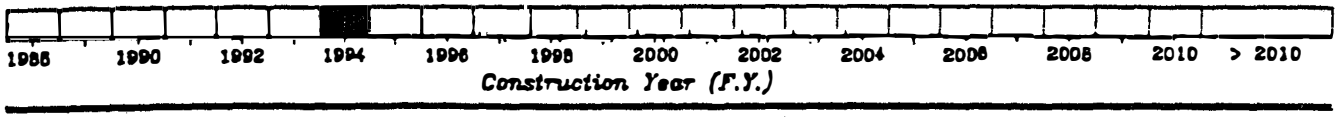
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #12

PROJECT: GRAHAM ROAD SERVICE EXTENSION

ESTM TOTAL PROJECT COST: $25,000



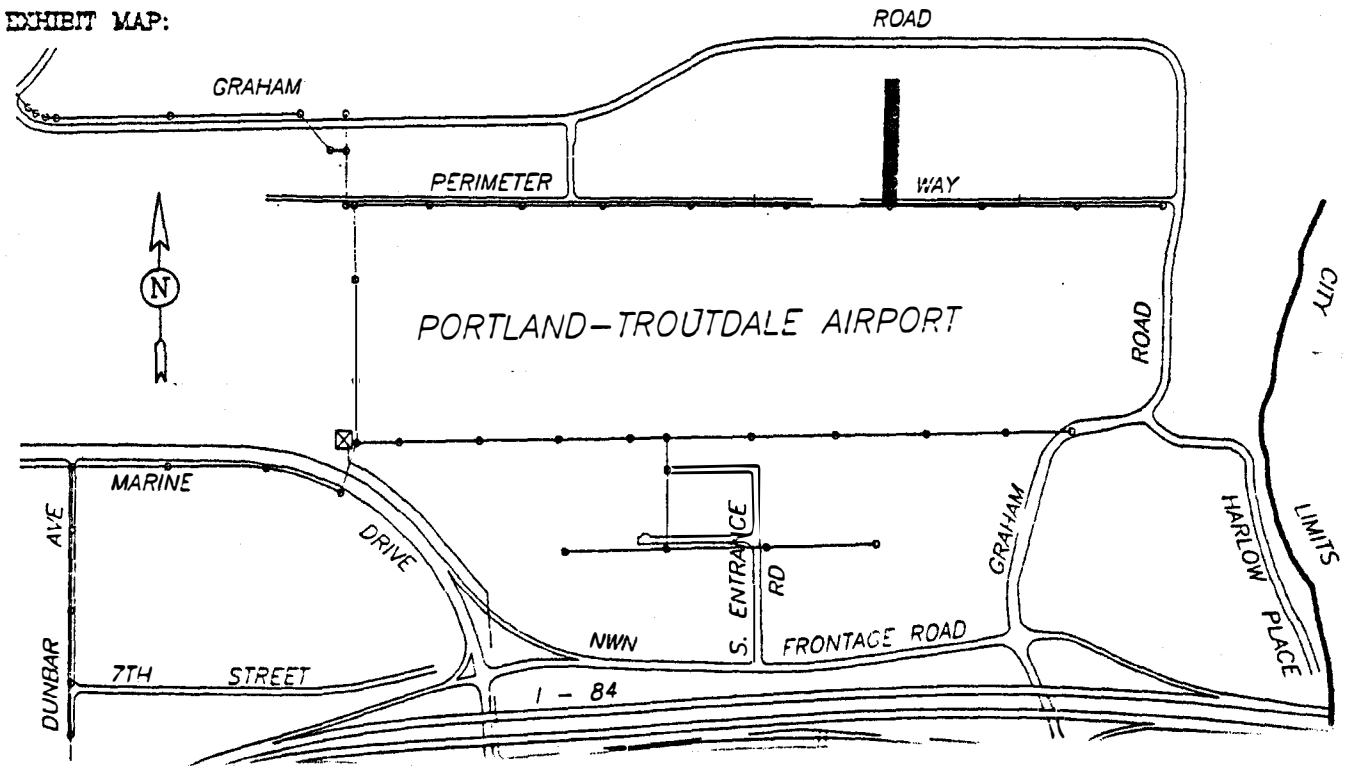
Project Description:
This project would construct 500 feet of 6" or 8" sanitary sewer together with manholes, cleanouts and other incidental appurtenances.

Project Justification/Benefit:
This project would provide service to industrial zoned property along North Graham Road.

Funding Notes:
This project would be funded entirely by benefiting property owners.

#52

EXHIBIT MAP:



CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #13

PROJECT: GRAHAM ROAD SERVICE EXTENSION

ESTM TOTAL PROJECT COST: $25,000

1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 > 2010

Construction Year (F.Y.)

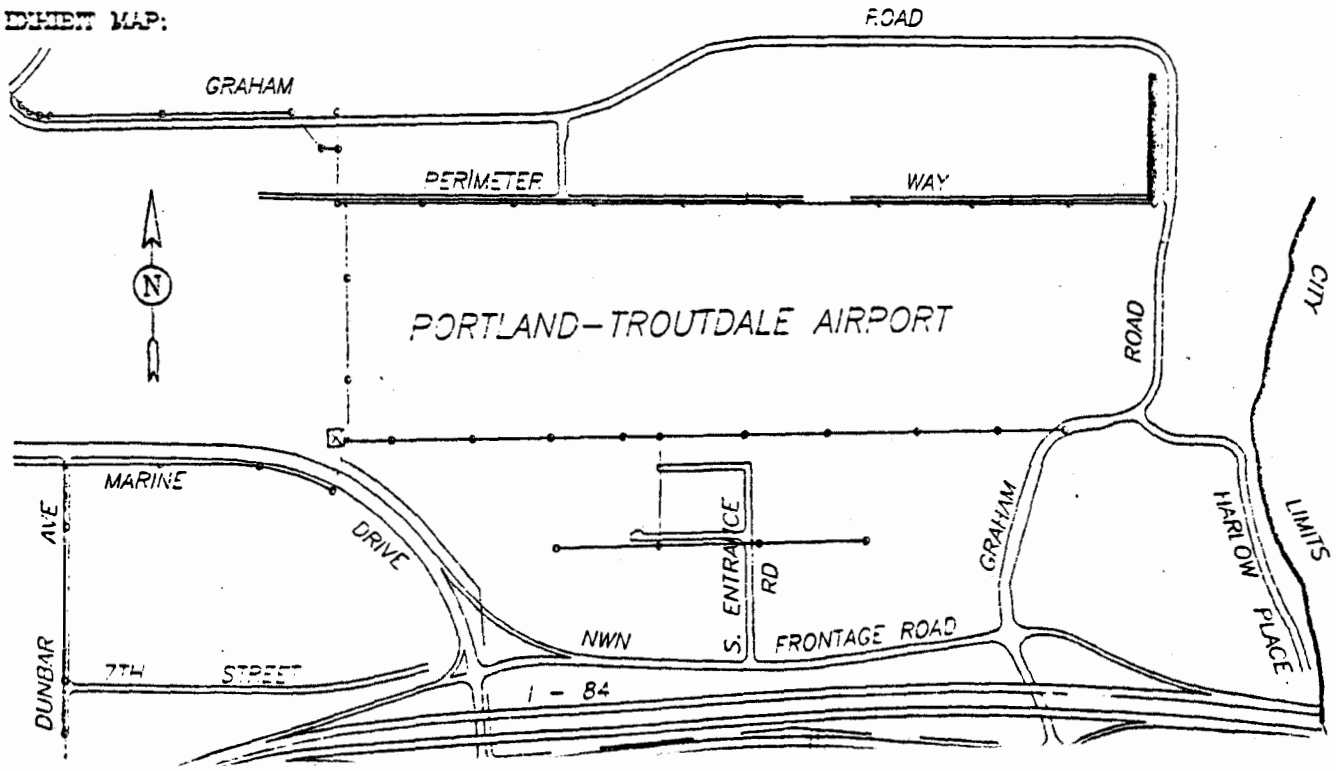
Project Description:
This project would construct 500 feet of 6" or 8" sanitary sewer together with manholes, cleanouts and other incidental appurtenances.

Project Justification/Benefit:
This project would provide service to industrial zoned property along North Graham Road.

Funding Notes:
This project would be funded entirely by benefiting property owners.

#53

EXHIBIT MAP:



CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #14

PROJECT: SOUTH TROUTDALE TRUNK SEWER EXTENSION(S)

ESTM TOTAL PROJECT COST: $200,000

1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 > 2010

Construction Year (F.Y.)

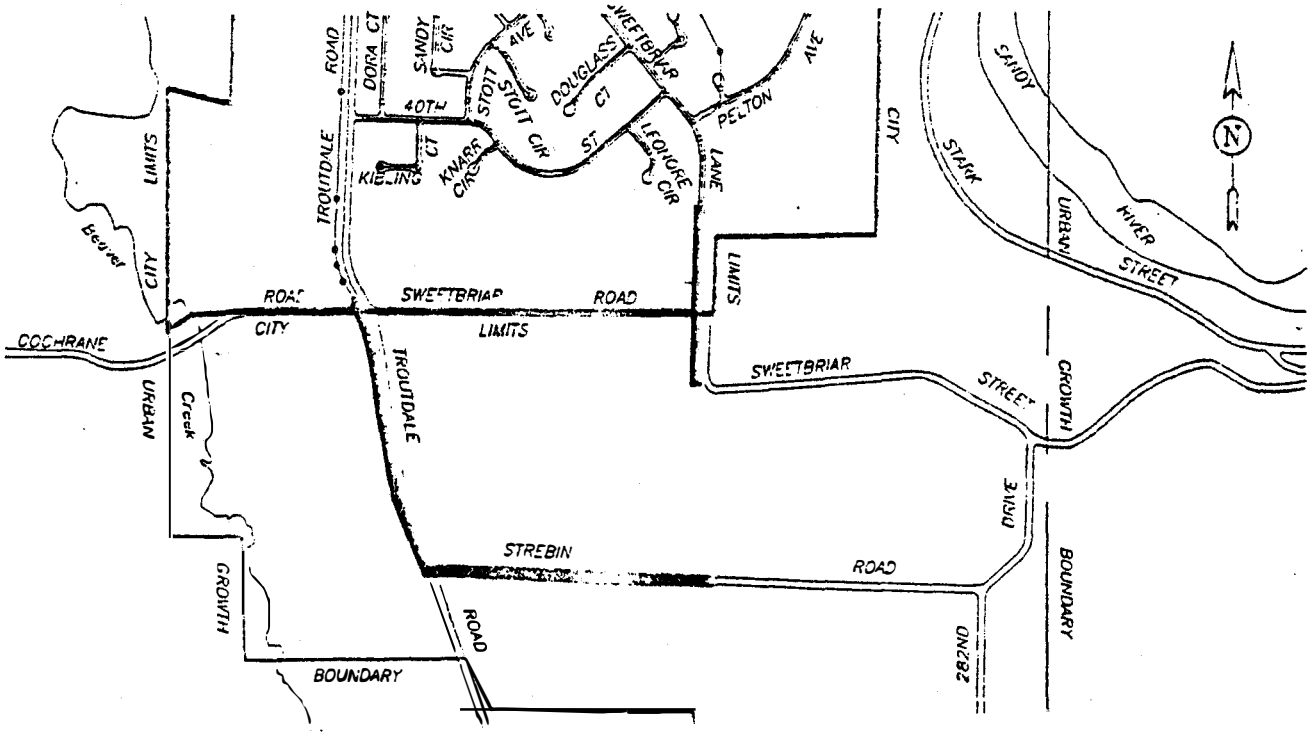
Project Description:
This project would construct 2800_ feet of 8" and 10" sanitary sewer complete with manholes, cleanouts and other appurtenances incidental to the project. Pumping may be required for portions of this extensions.

Project Justification/Benefit:
This project will provide sanitary sewer service to currently un-annexed areas within our Urban Growth Boundary. These extensions would take place with annexation and/or development requests.

Funding Notes:
This project would be funded primarily by benefiting property owners, The City may participate in oversizing. Any City participation would be from the sewer improvement funds with resources being system development charges or other capital sources.

#54

EXHIBIT MAP:



CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #16

PROJECT: GRAHAM COLLECTOR EXTENSION

ESTM TOTAL PROJECT COST: $35,000

1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 > 2010

Construction Year (F.Y.)

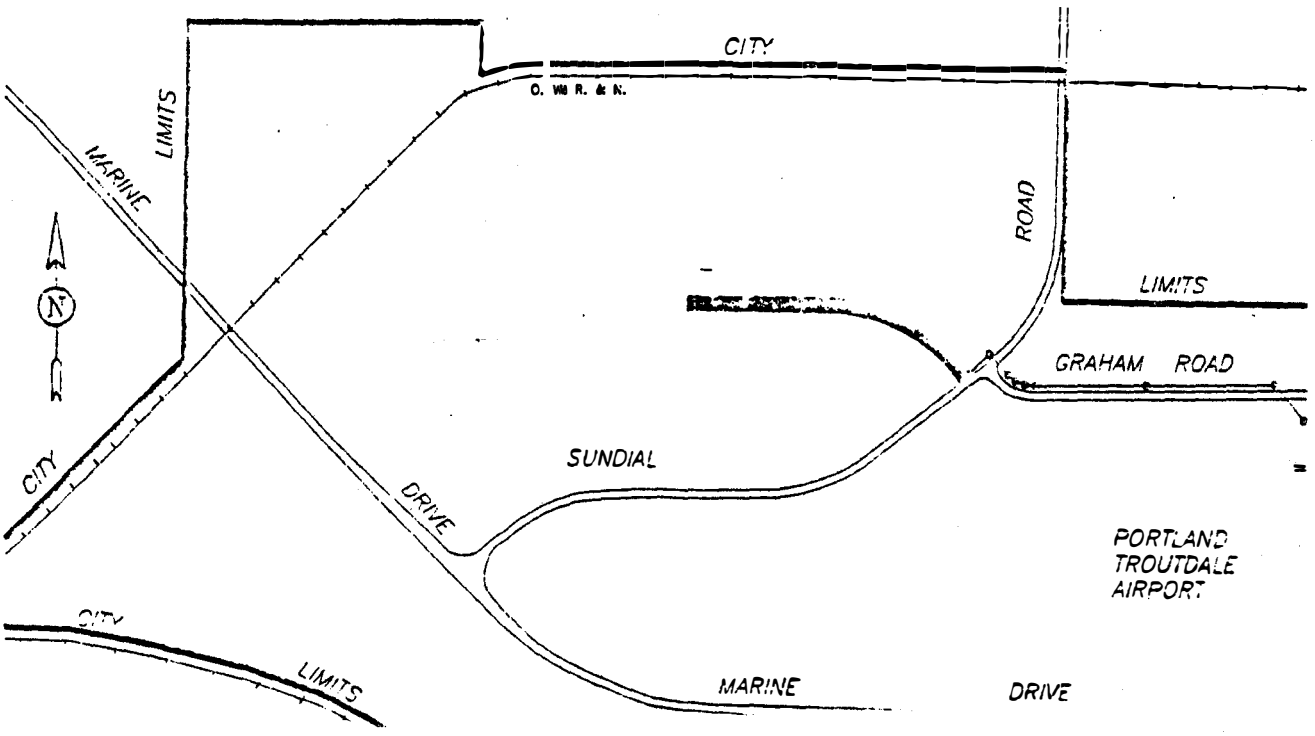
Project Description:
This project would construct 550 feet of 8" gravity sewerline, manholes, cleanouts and other appurtenances incidental to the project.

Project Justification/Benefit:
This project will serve an industrial subdivision and allow for the timely construction and development of properties within that subdivision.

Funding Notes:
This project would be funded entirely by the Port of Portland and/or benefiting property owners.

#56

EXHIBIT MAP:



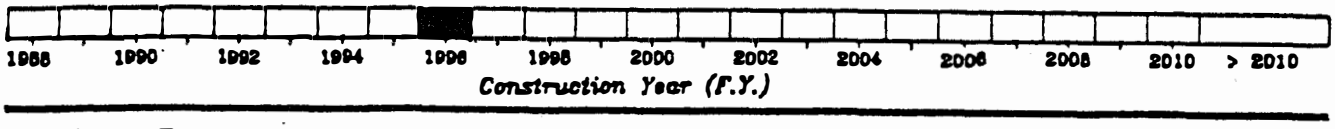
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #17

PROJECT: WEST HISTORICAL COLUMBIA RIVER HIGHWAY TRUNK SEWER EXTENSION

ESTM TOTAL PROJECT COST: $40,000



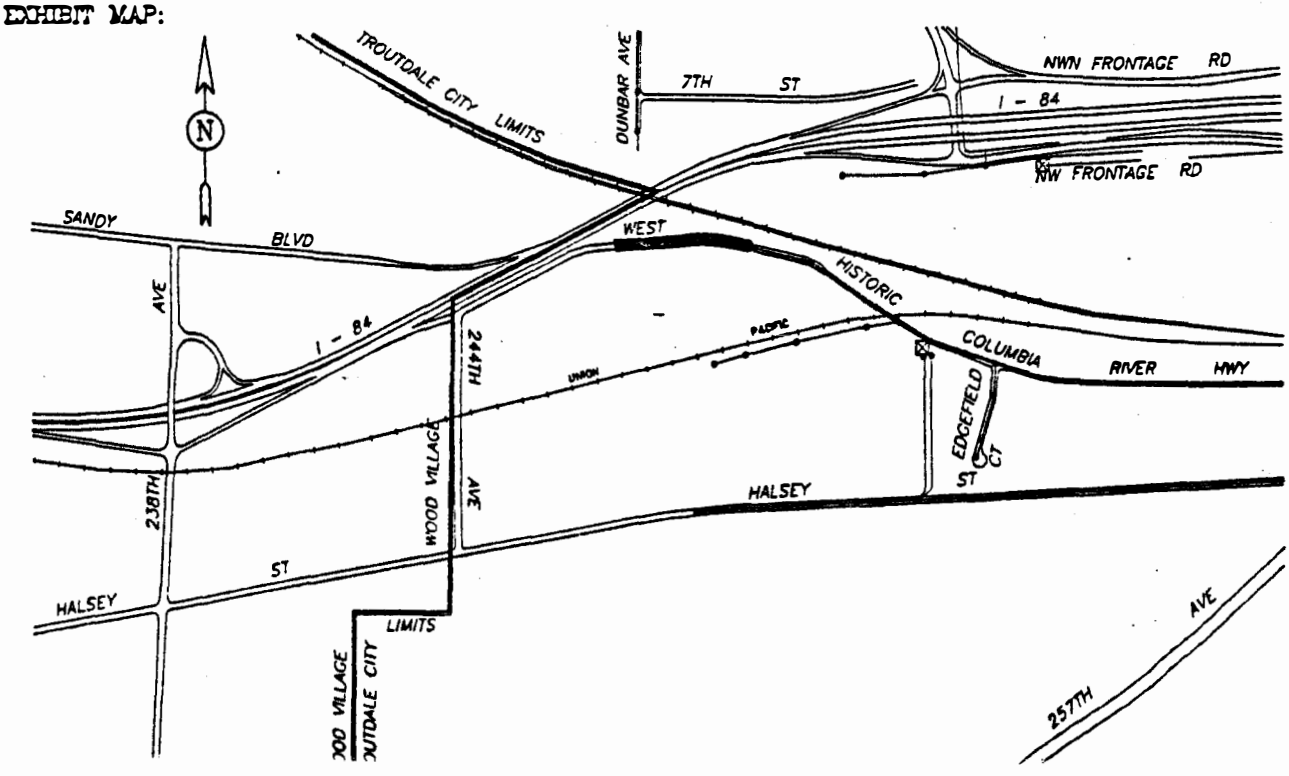
Project Description:
This project would construct 850 feet of 8" gravity sewerline, manholes, cleanouts and other appurtenances incidental.

Project Justification/Benefit:
This project would serve the northern portions of the Multnomah County Farm property. It would allow for development and expansion to meet the service requirements of this area.

Funding Notes:
This project would be funded entirely by benefiting property owners.

#57

EXHIBIT MAP:



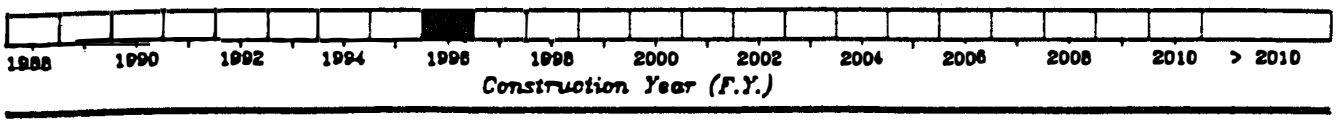
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #18

PROJECT: UNION PACIFIC TRUNK EXTENSION

ESTM TOTAL PROJECT COST: $75,000



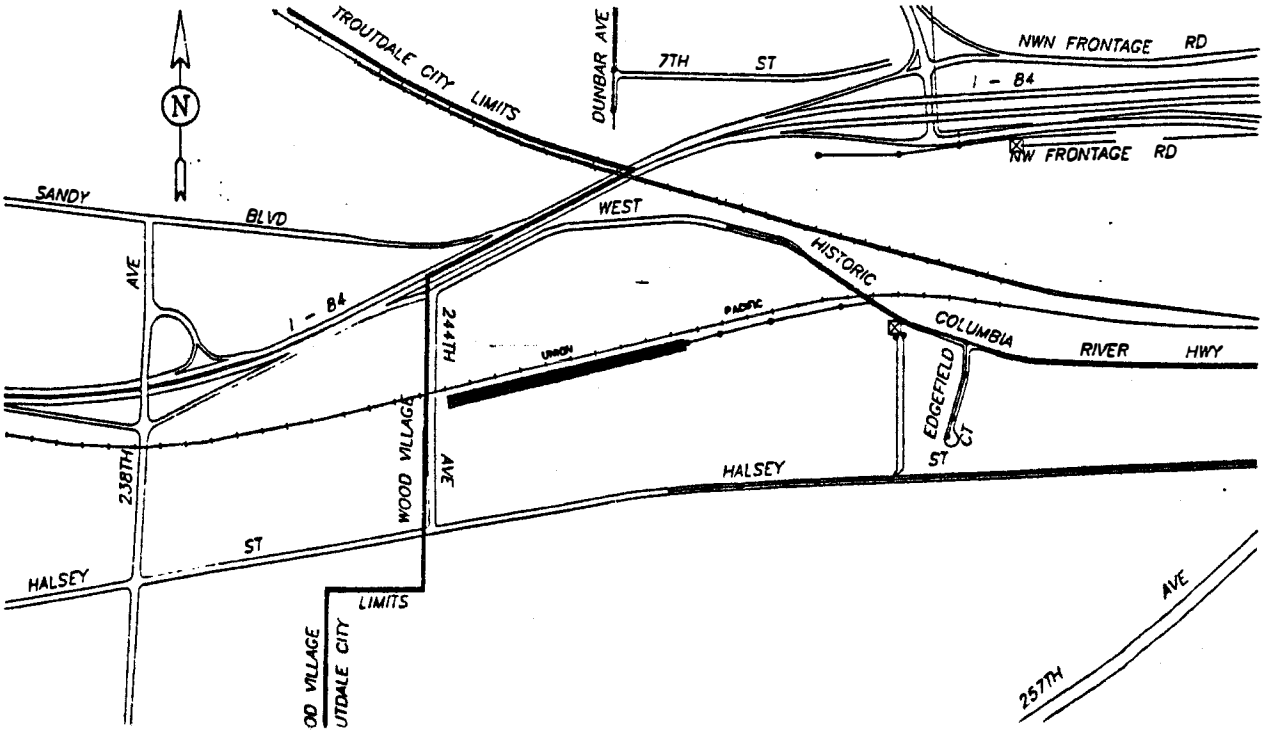
Project Description:
This project would construct 1400 feet of 8" gravity sewerline, manholes, cleanouts and other appurtenances incidental.

Project Justification/Benefit:
This project would serve the northern portions of the Multnomah County Farm property. It would allow for development and expansion to meet the service requirements of this area.

Funding Notes:
This project would be funded entirely by benefiting property owners.

#58

EXHIBIT MAP:



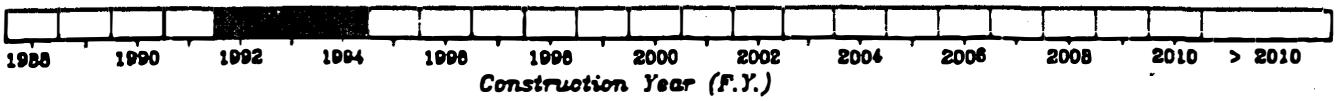
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #19

PROJECT: WASTEWATER TREATMENT PLANT EXPANSION PROJECT

ESTM TOTAL PROJECT COST: $1,500,000-2,500,000



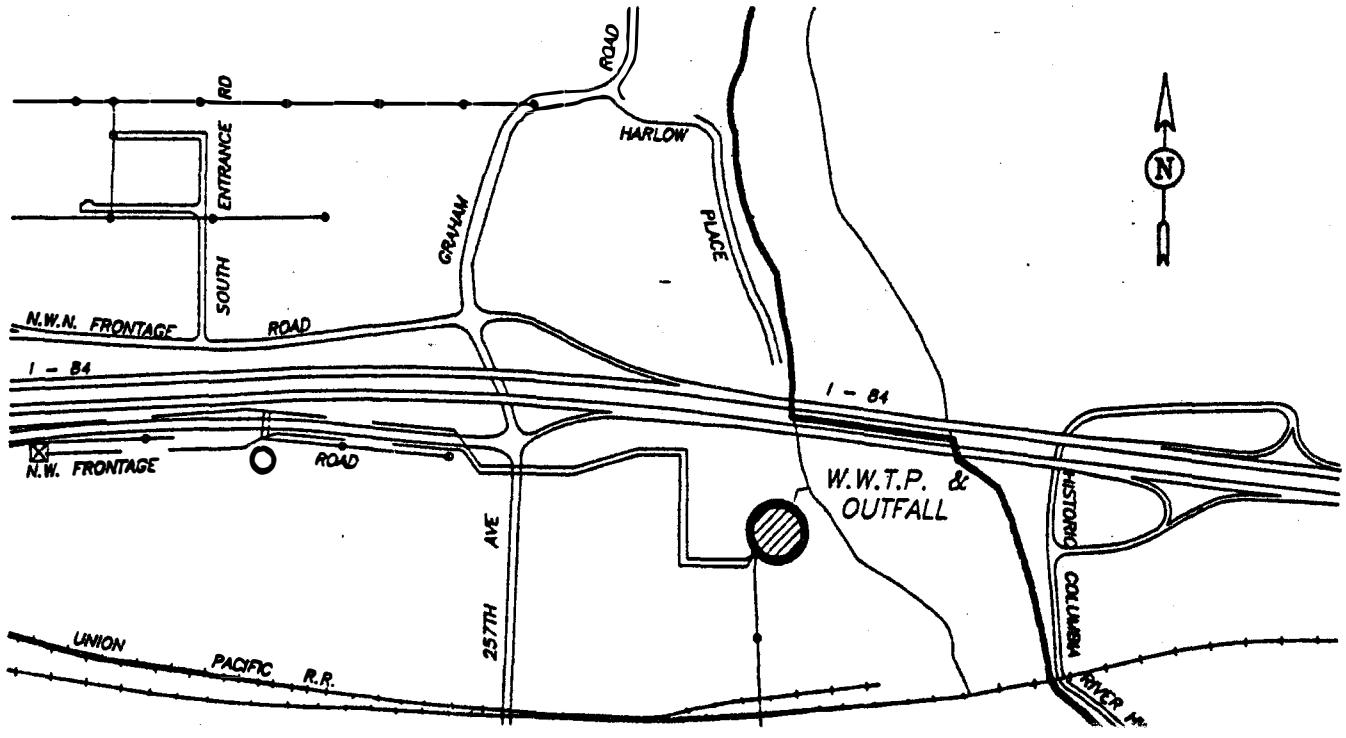
Project Description:
This project would construct additional digester and sludge handling capacity to an optimum population equivalency of 20,000.

Project Justification/Benefit:
The City of Troutdale's wastewater treatment plant is nearing capacity in some key plant elements. This project would, through a phased construction process, keep pace with treatment demand and regulatory requirements.

Funding Notes:
This project would be funded by revenue bonds, system development charges and State/Federal grants and loans, etc.

#59

EXHIBIT MAP:



CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #20

PROJECT: MULTNOMAH COUNTY FARM COLLECTOR AND LATERAL SYSTEM

ESTM TOTAL PROJECT COST: $200,000-400,000

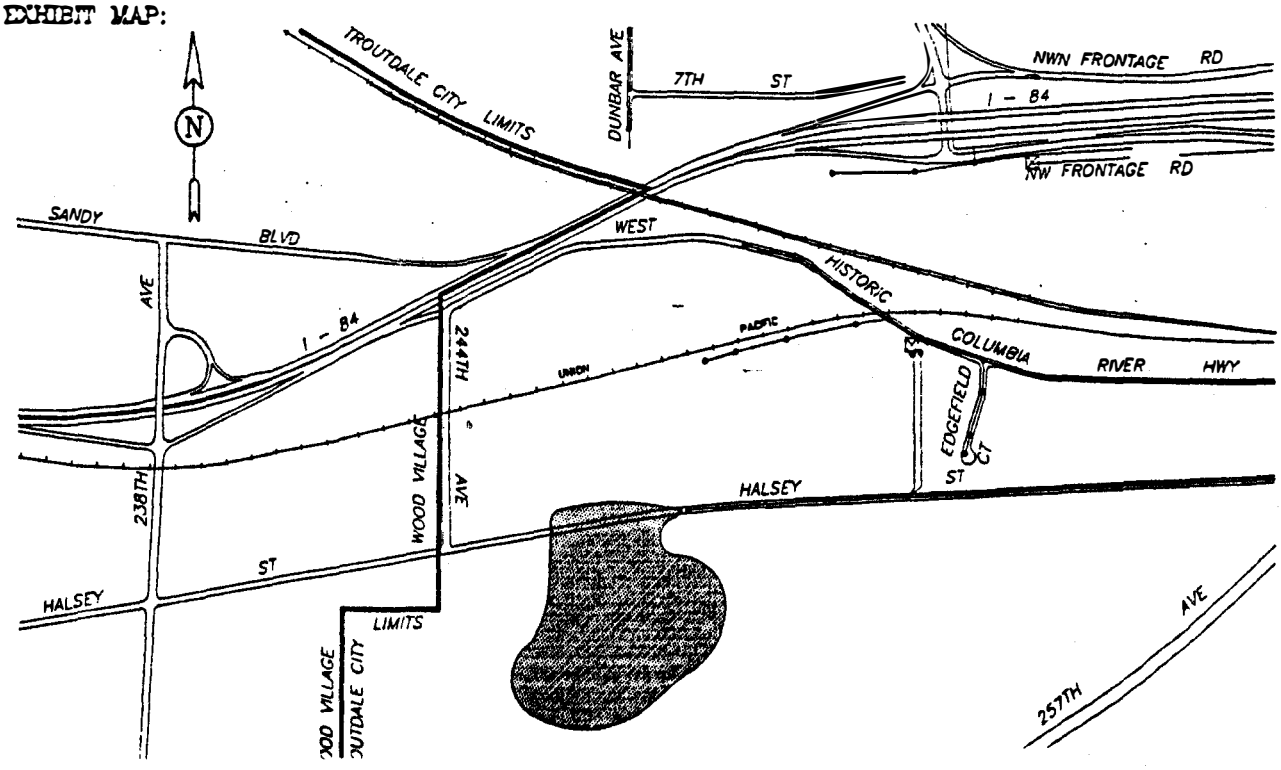
Project Description:
This project would construct 4", 6" and 8" sanitary sewerlines together with manholes, cleanouts and other incidental appurtenances.

Project Justification/Benefit:
This project would provide internal sewer service to all areas currently un-served in the Multnomah County Farm properties. The timing of this project would be commensurate with development driven need.

Funding Notes:
Funding will be done entirely by benefiting property owners.

#60

EXHIBIT MAP:



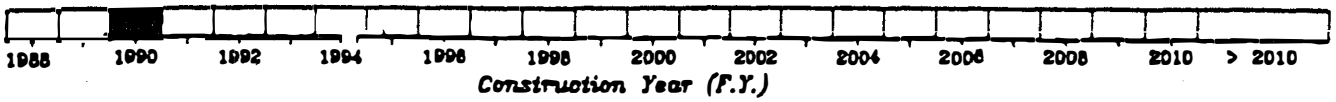
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #21

PROJECT: SANDEE PALISADES IV / COLLECTOR AND LATERAL SYSTEM

ESTM TOTAL PROJECT COST: $130,000



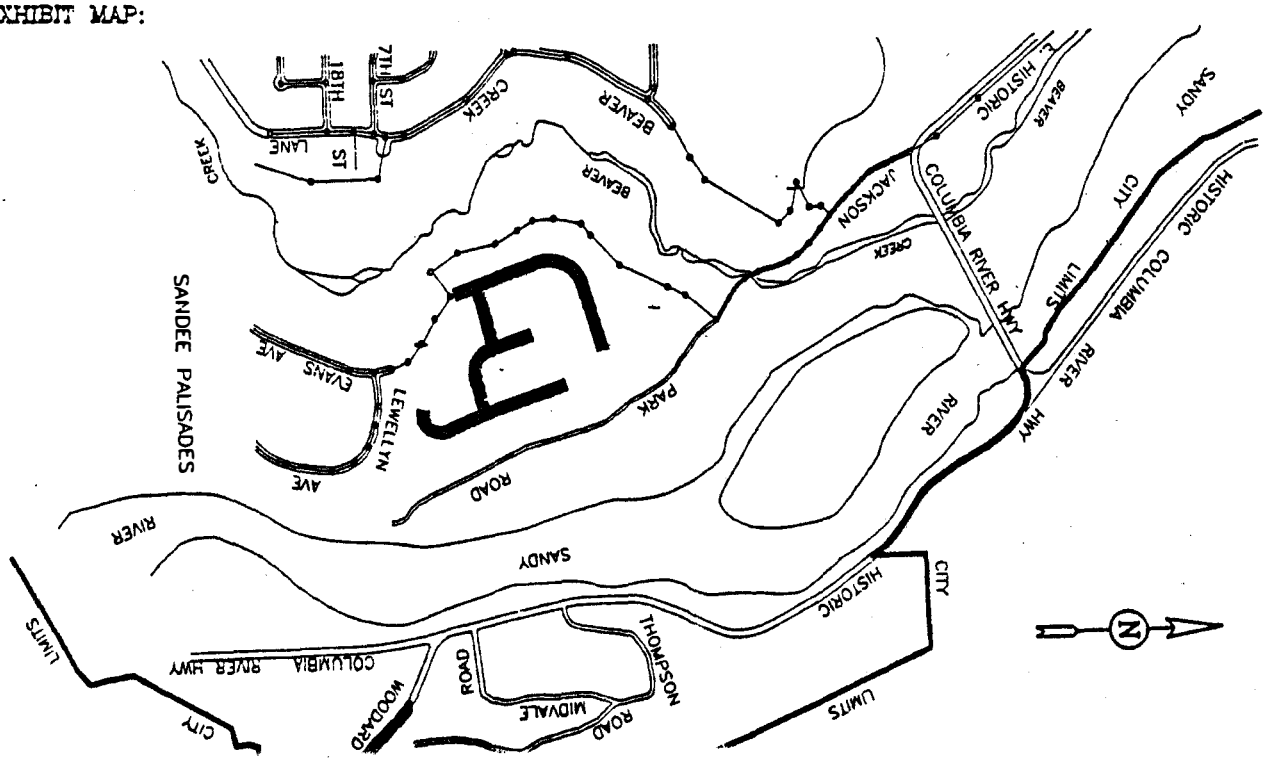
Project Description:
This project will construct approximately 2600 lineal feet of 8" sewerline along with manholes, laterals and other associated appurtenances.

Project Justification/Benefit:
This project will provide internal sewer services for a 73 lot residential subdivision. The property is not currently on sewer and no other existing public facilities are in place. This project will benefit the community by providing additional lots for the construction of residential units.

Funding Notes:
This project will be funded entirely by benefiting property owners utilizing local improvement district processes as a financing tool.

#26

EXHIBIT MAP:



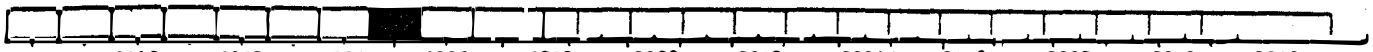
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #22

PROJECT: STARK STREET / TROUTDALE ROAD COLLECTOR & LATERAL SYSTEM

ESTM TOTAL PROJECT COST: $140,000



Construction Year (F.Y.)

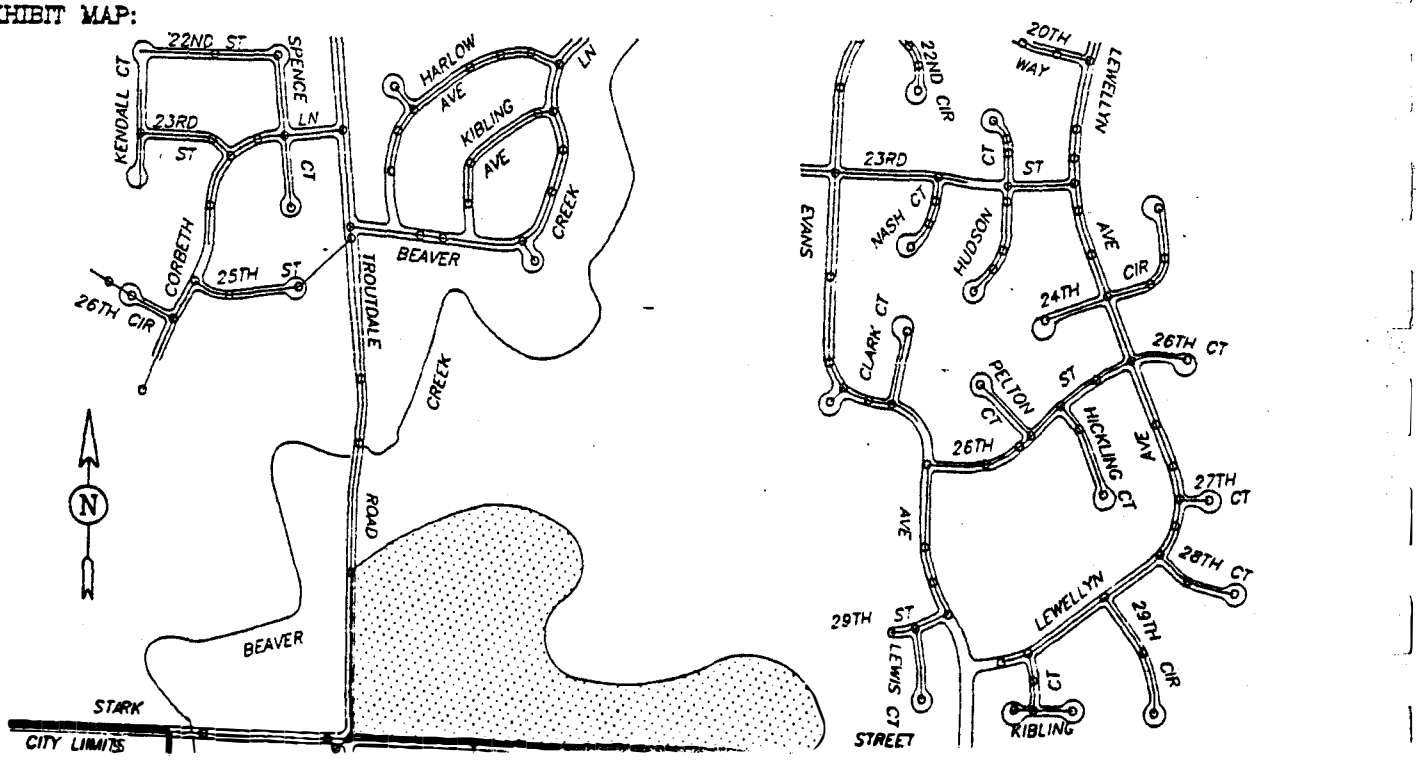
Project Description:
This project would construct 6" and 8" sanitary sewerlines commensurate with commercial and residential development needs. It would construct these facilities along with manholes, cleanouts and other incidental appurtenances.

Project Justification/Benefit:
This project would provide internal sewer service to all non-serviced areas. This project would be necessary for any development non immediately abutting Troutdale Road or Stark Street. This project would benefit the City by providing the availability of additional commercial and residential properties for development.

Funding Notes:
This project would be funded entirely by benefiting property owners.

#27

EXHIBIT MAP:



CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #23

PROJECT: SANDEE PALISADES / BEAVER CREEK COLLECTOR & LATERAL SYSTEM

ESTM TOTAL PROJECT COST: $75,000

1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 > 2010

Construction Year (F.Y.)

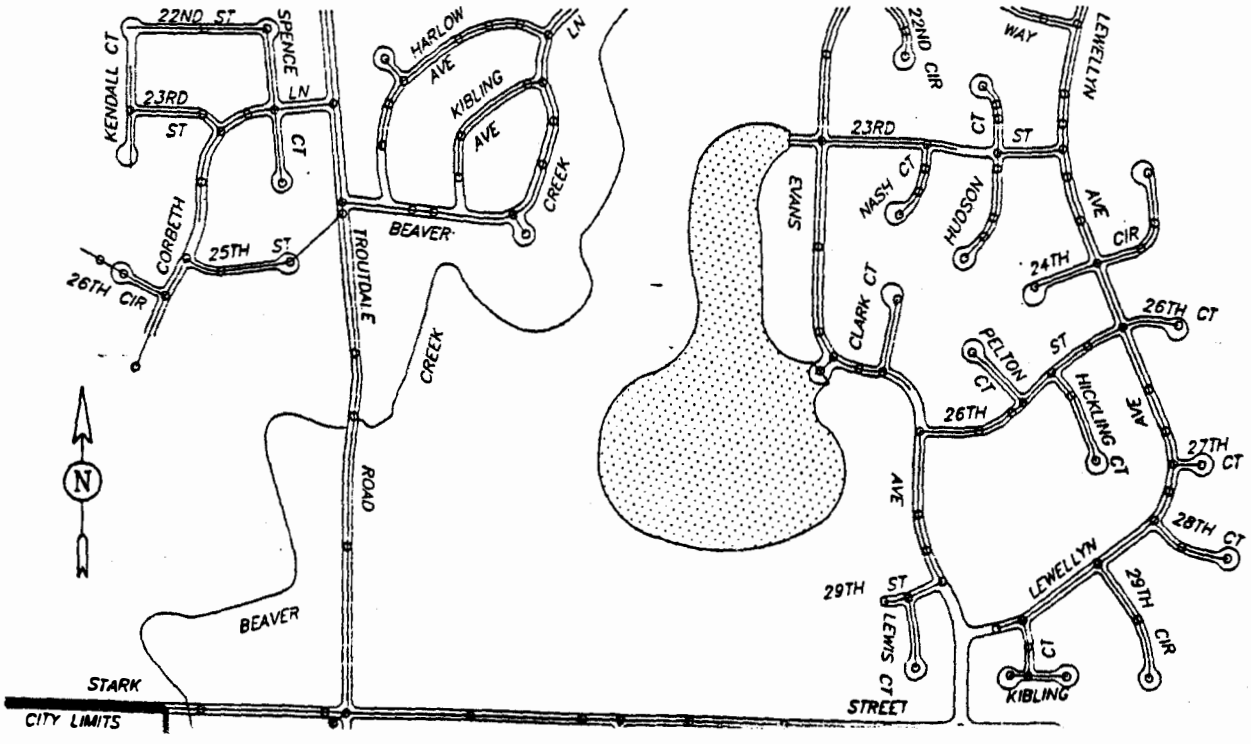
Project Description:
This project would construct 6" and 8" sanitary sewerlines together with manholes, cleanouts and other incidental appurtenances, and would connect to the existing sewer collection and trunk system serving Sandee Palisades.

Project Justification/Benefit:
This project would provide the sanitary sewer collection system necessary for the development of residential properties. The timing of this project would be commensurate with development driven requests.

Funding Notes:
This property will be funded entirely by benefiting property owners.

#28

EXHIBIT MAP:



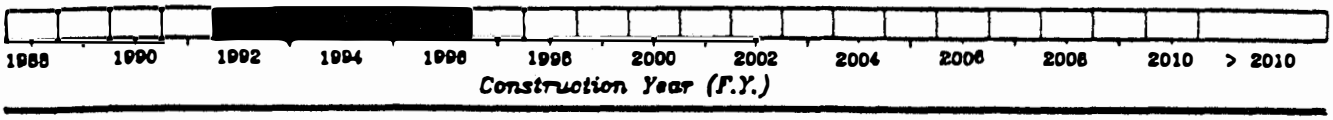
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #24

PROJECT: CORBETH II SANITARY SEWER EXTENSION/COLLECTOR & LATERAL

ESTM TOTAL PROJECT COST: $150,000



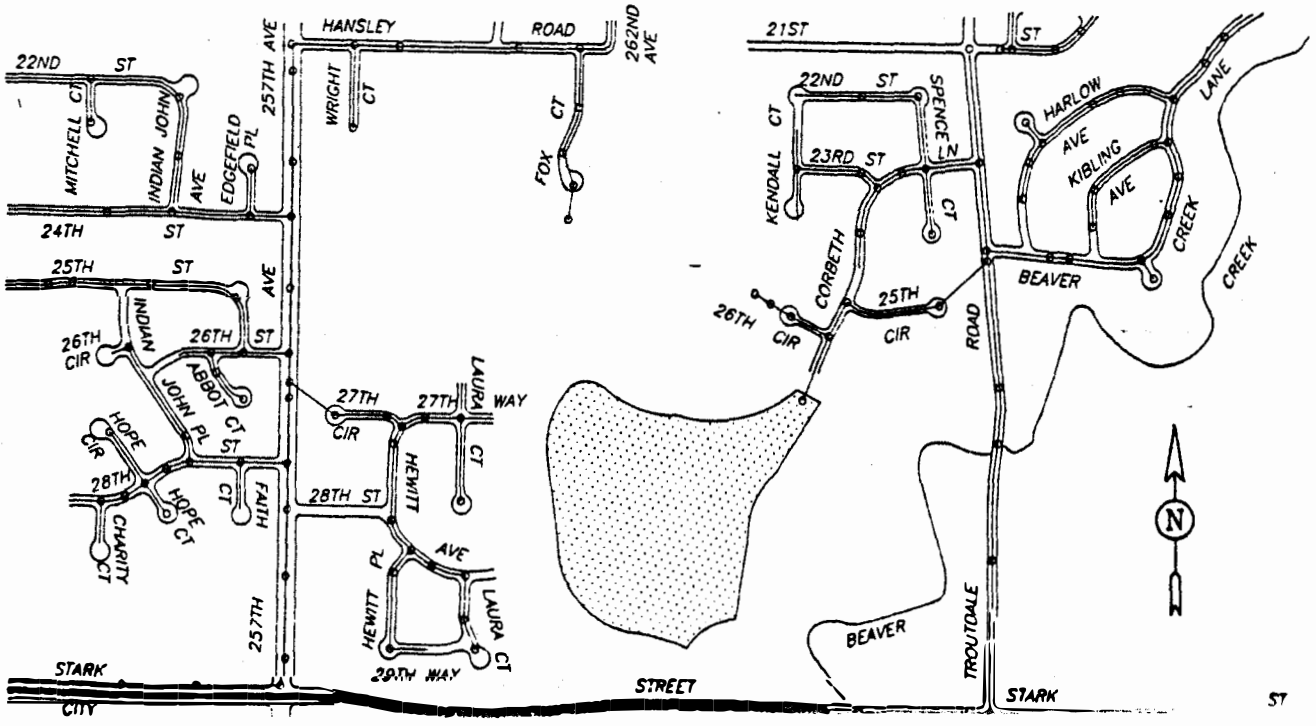
Project Description:
This project will construct 6" and 8" sanitary sewerlines together with manholes, cleanouts, laterals and other incidentals appurtenances.

Project Justification/Benefit:
This project will provide internal sewer services for the un-serviced sewer area between Stark Street and Corbeth immediately adjacent to the Beaver Creek Drainage. This project will allow for the development of additional residential lots commensurate with the City's Comprehensive Plan.

Funding Notes:
This project will be funded entirely by benefiting property owners.

#29

EXHIBIT MAP:



CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #25

PROJECT: 257TH / HENSLEY COLLECTOR AND LATERAL SYSTEM PROJECT

ESTM TOTAL PROJECT COST: $120,000

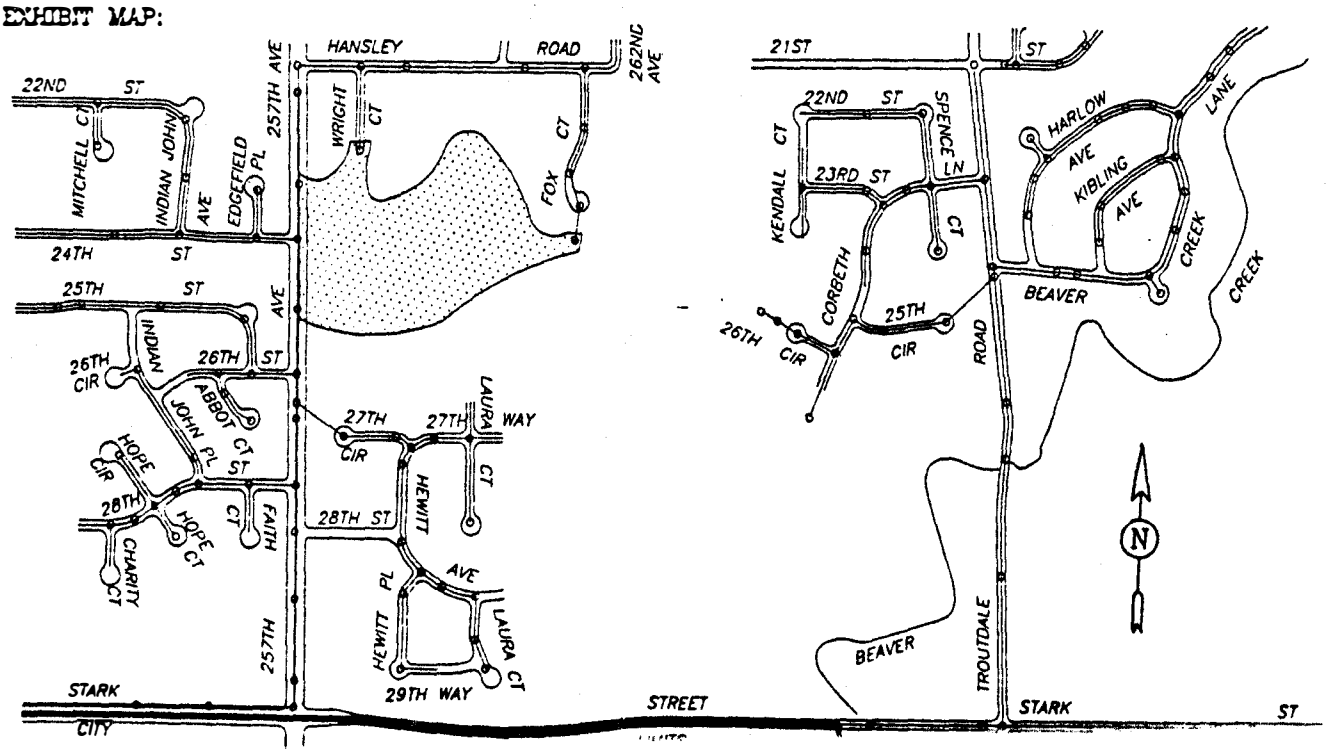
Project Description:
This project would construct 6" and 8" sanitary sewerlines together with manholes, cleanouts, laterals and other incidental appurtenances.

Project Justification/Benefit:
This project will provide internal sewer service necessary for the development of residential housing.

Funding Notes:
This project will be funded entirely by benefiting property owners.

#30

EXHIBIT MAP:



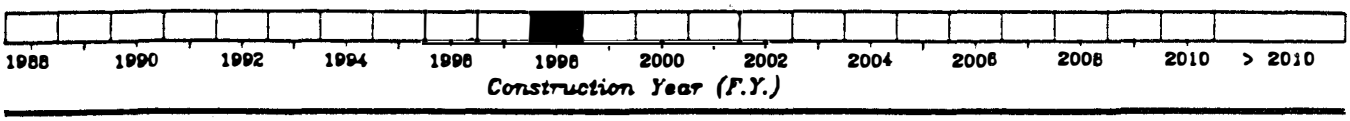
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #26

PROJECT: SANDY ROAD COLLECTOR & LATERAL SYSTEM

ESTM TOTAL PROJECT COST: $175,000



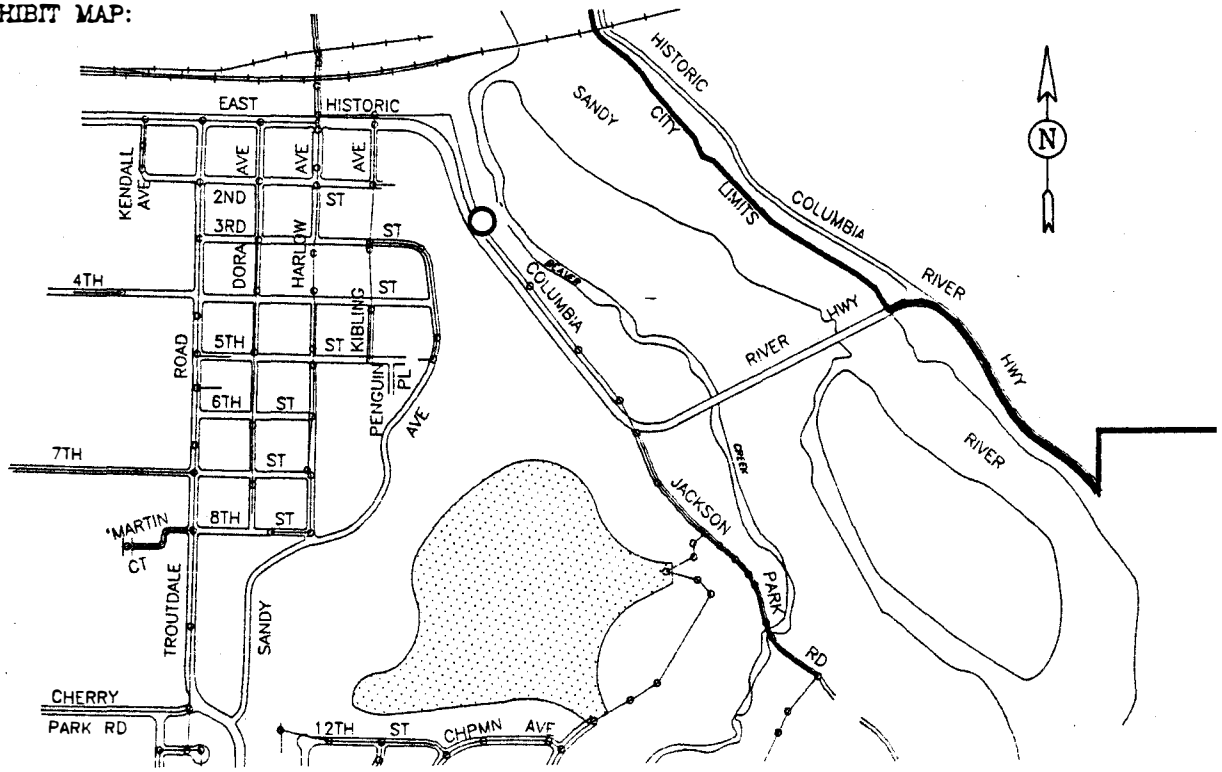
Project Description:
This project would construct 6" and 8" sanitary sewerlines together with manholes, cleanouts, laterals and other incidental appurtenances.

Project Justification/Benefit:
This project will provide internal sewer service necessary for the development of residential housing.

Funding Notes:
This project will be funded entirely by benefiting property owners.

#31

EXHIBIT MAP:



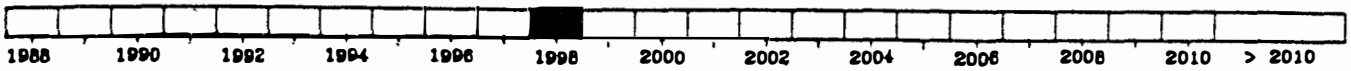
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #27

PROJECT: SWEETBRIAR ROAD COLLECTOR AND LATERAL SYSTEM

ESTM TOTAL PROJECT COST: $100,000



Construction Year (F.Y.)

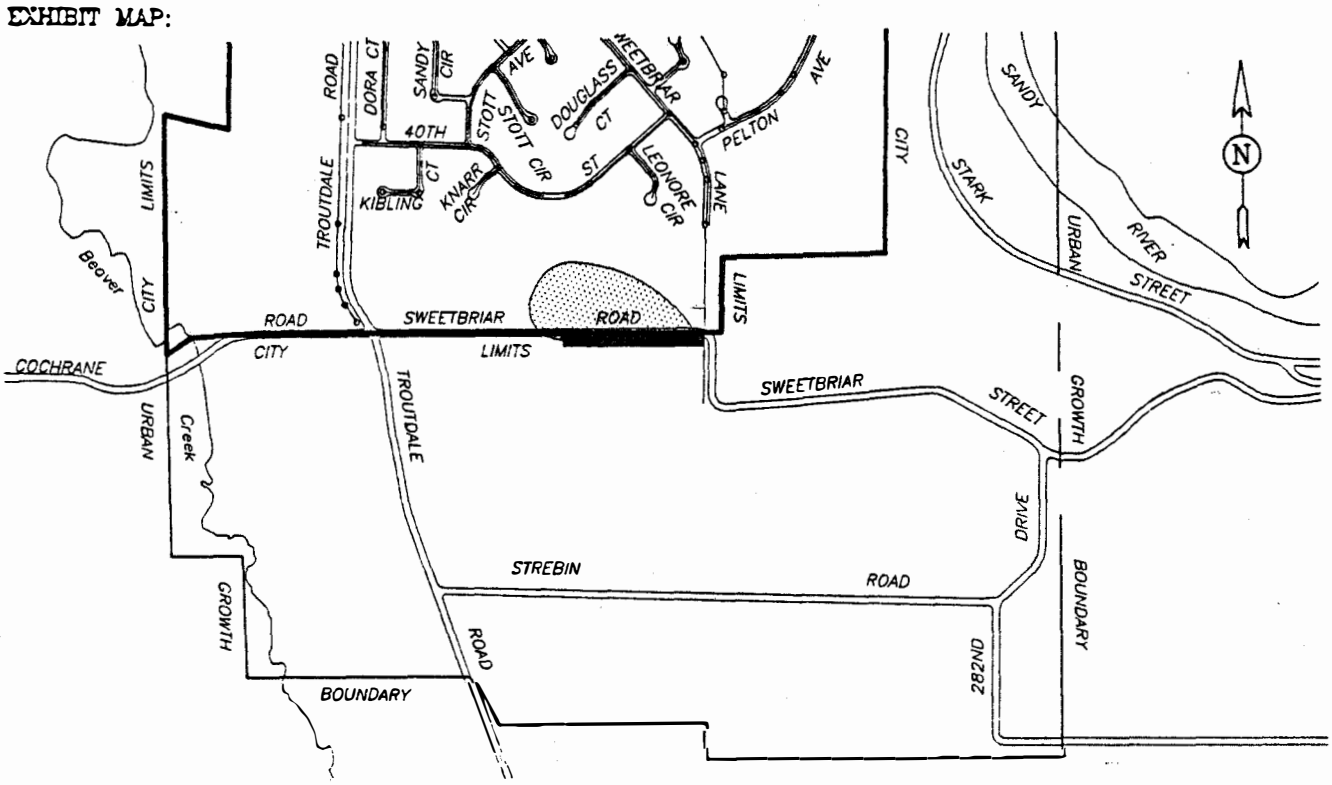
Project Description:
This project would construct 6" and 8" sanitary sewerlines together with manholes, cleanouts, laterals and other incidental appurtenances.

Project Justification/Benefit:
This project will provide internal sewer service necessary for the development of residential housing.

Funding Notes:
This project will be funded entirely by benefiting property owners.

#32

EXHIBIT MAP:



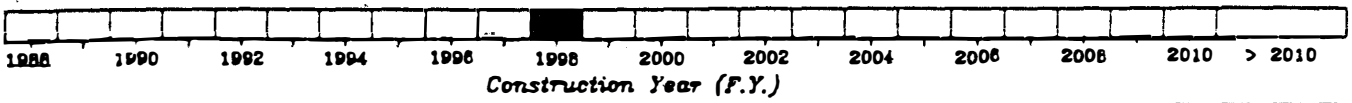
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #28

PROJECT: TROUTDALE ROAD / HENSLEY EXTENSION COLLECTOR & LATERAL

ESTM TOTAL PROJECT COST: $125,000



Project Description:

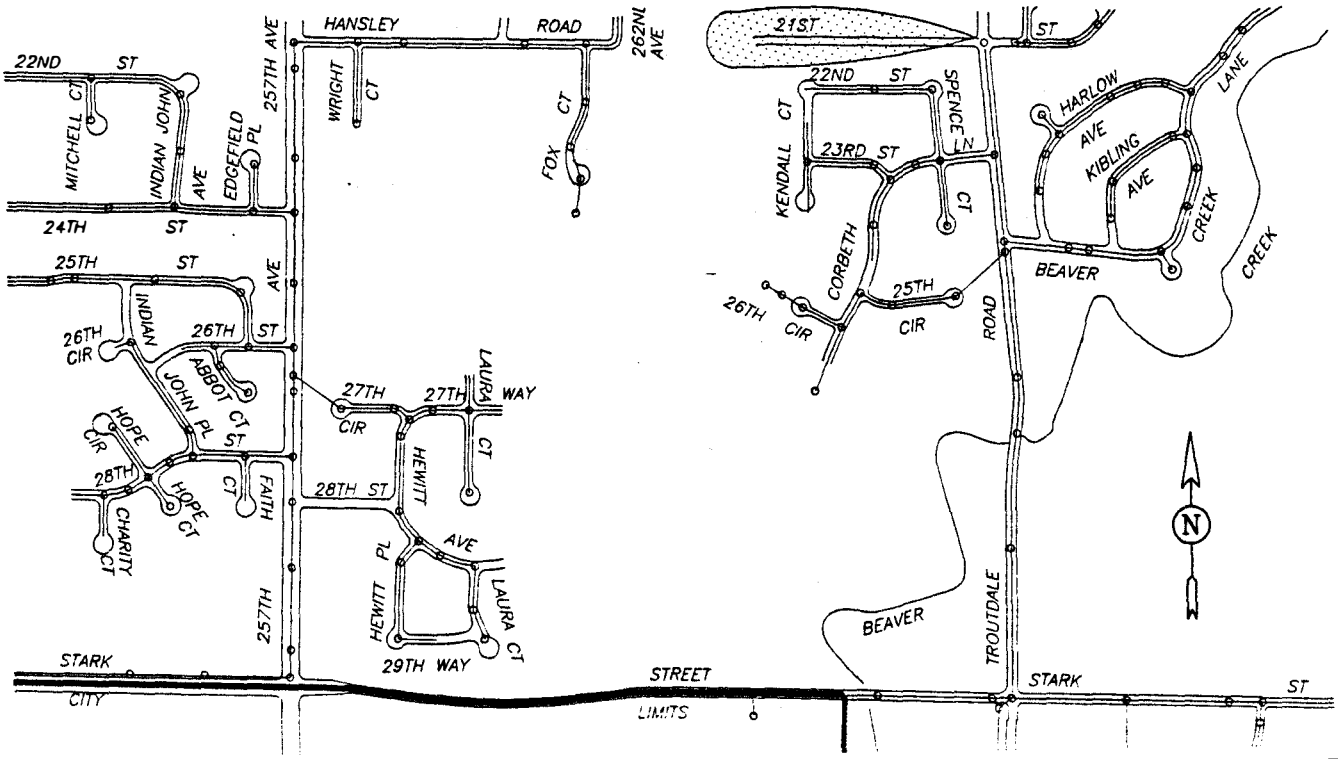
This project would construct 6" and 8" sanitary sewerlines together with manholes, cleanouts, laterals and other incidental appurtenances.

Project Justification/Benefit:
This project will provide internal sewer service necessary for the development of residential housing.

Funding Notes:
This project will be funded entirely by benefiting property owners.

#33

EXHIBIT MAP:



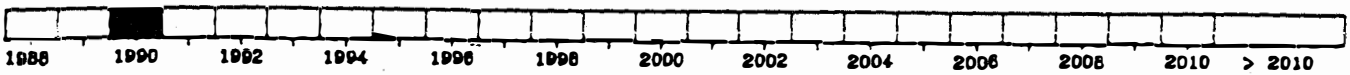
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #29

PROJECT: CEREGHINO ACRES SANITARY SEWERLINES

ESTM TOTAL PROJECT COST: $80,000



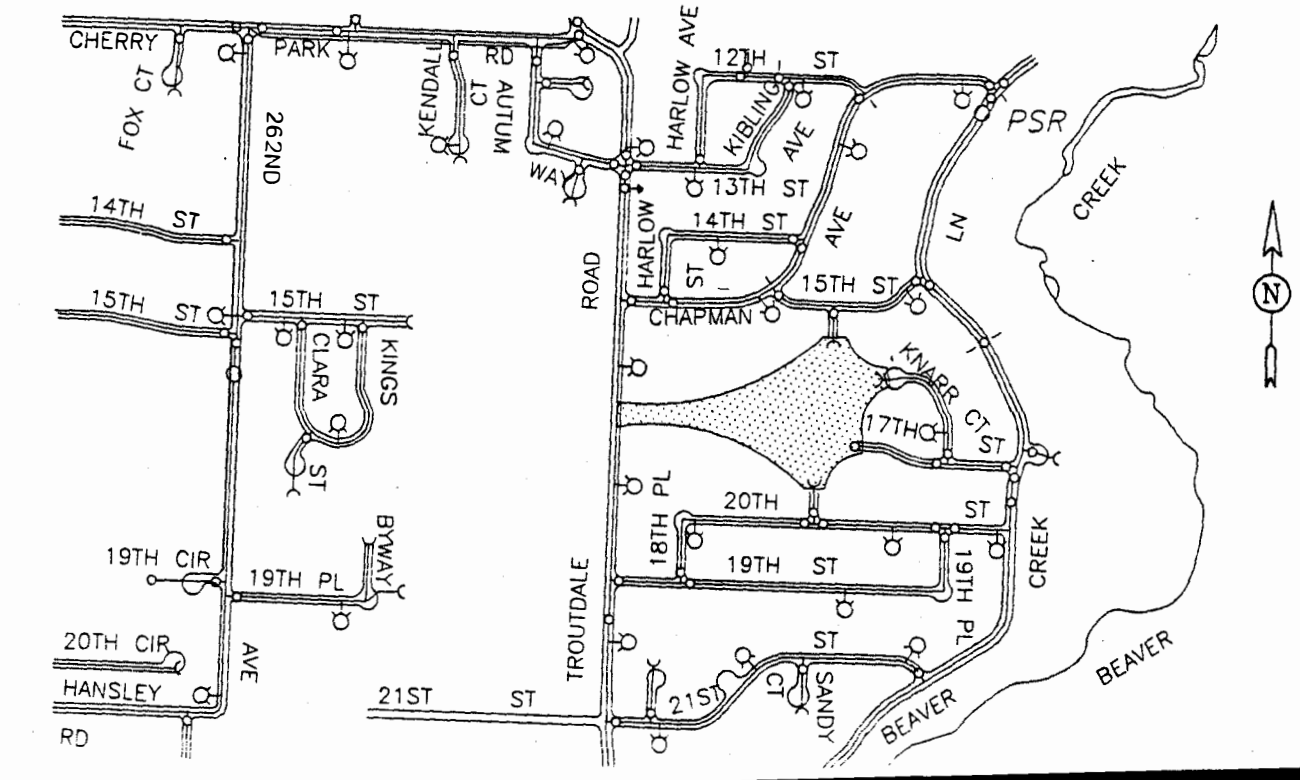
Project Description:
This project would construct 4", 6" and 8" sanitary sewerlines together with manholes, cleanouts, laterals and incidental appurtenances.

Project Justification/Benefit:
This project would provide internal sewer service for approximately 34 residential lots. This project will make available additional residential property.

Funding Notes:
Funding will be made entirely by the benefiting property owners, possible utilizing local improvement district monies as a financing tool.

#34

EXHIBIT MAP:



WASTE WATER EFFLUENT QUALITY ANALYSIS

2.400 DRAINAGE COLLECTION AND DISPOSAL

.410 GENERAL

The City's storm water collection system is composed of a series of drywells, pipe network, outfalls and a single pump station. The pumping facility, together with some open ditch and culvert facilities, are under the jurisdictional control of the Sandy Drainage District.

The City's inventory and replacement cost for the system under its ownership is depicted on the table entitled "Storm Water Collection System Replacement Cost Analysis."

A "Master Drainage Plan" has been budgeted for the fiscal year 1989-90, and this plan will provide the City with a dynamic model of its existing facilities together with a needs assessment for future requirements. An interim drainage guideline has been adopted by City ordinance to accommodate development pressures in the industrial portion of the City along the I-84 corridor and north to the city limit line.

.420 COLLECTION SYSTEM

The City's storm water collection system contains approximately fourteen miles of storm sewerlines together with inlets, manholes and culverts. Some seventy drywells/sumps also serve as collection and disposal facilities. These facilities are depicted on the map "Storm Water System." This system is designed to meet the drainage requirements generated by the rainfall duration/intensity of a ten year storm. The "10-Year/24 Hour Precipitation" map and the "Intensity-Duration-Frequenty" chart depict these design guidelines.

.422 COLLECTOR, TRUNK AND INTERCEPTOR SYSTEMS

The City's drainage system(s) have been installed in concert with current development. The trunk and interceptor systems have been installed and funded through local improvement districts and/or as needed as part of the arterial and local roads systems. The system inventory and replacements cost analysis is depicted in the table "Storm Sewer Collection System Replacement Cost Analysis."

STORM SEWER COLLECTION SYSTEM
REPLACEMENT COST ANALYSIS

COLLECTION SYSTEM

A) Storm Sewer Lines CSP	Linear Ft	Cost/Foot *	Total Cost
4"	165	$19.49	$3,215.85
6"	910	$21.36	$19,437.60
8"	9,125	$24.78	$226,117.50
10"	3,425	$28.25	$96,756.25
12"	36,565	$30.88	$1,129,127.20
15"	10,125	$34.01	$344,351.25
18"	12,605	$38.88	$490,082.40
21"	2,535	$43.72	$110,830.20
24"	12,960	$48.52	$628,819.20
27"	5,595	$60.81	$340,231.95
30"	7,370	$71.07	$523,785.90
36"	4,535	$82.64	$374,772.40
42"	1,020	$94.56	$96,451.20
48"	800	$104.95	$83,960.00
54"	1,930	$131.51	$253,814.30
60"	950	$144.12	$136,914.00
TOTAL	72,920		$4,858,667.20

B) Storm Inlets	Quantity	Cost/Each	Total Cost
Catch Inl.	387	$685.00	$265,095.00
Inlet Line	387	$565.00	$218,655.00
	774		$483,750.00

C) Manholes	Quantity	Cost/Each	Total Cost
0 - 4 Ft	75	$845.00	$63,375.00
4 - 8 Ft	95	$1,040.00	$98,800.00
8 - 12 Ft	185	$1,610.00	$297,850.00
12 - 16 Ft	15	$2,185.00	$32,775.00
16 - 20 Ft	6	$2,755.00	$16,530.00
TOTAL	376		$509,330.00

	Quantity	Cost	Total Cost
D) Dry Wells/Sumps	70	$3,120.00	$218,400.00
TOTAL	70		$218,400.00

E) Culverts	Linear Ft	Cost/Foot	Total Cost
6"	260	$21.36	$5,553.60
8"	250	$24.78	$6,195.00
12"	1,590	$30.88	$49,099.20
15"	330	$34.01	$11,223.30

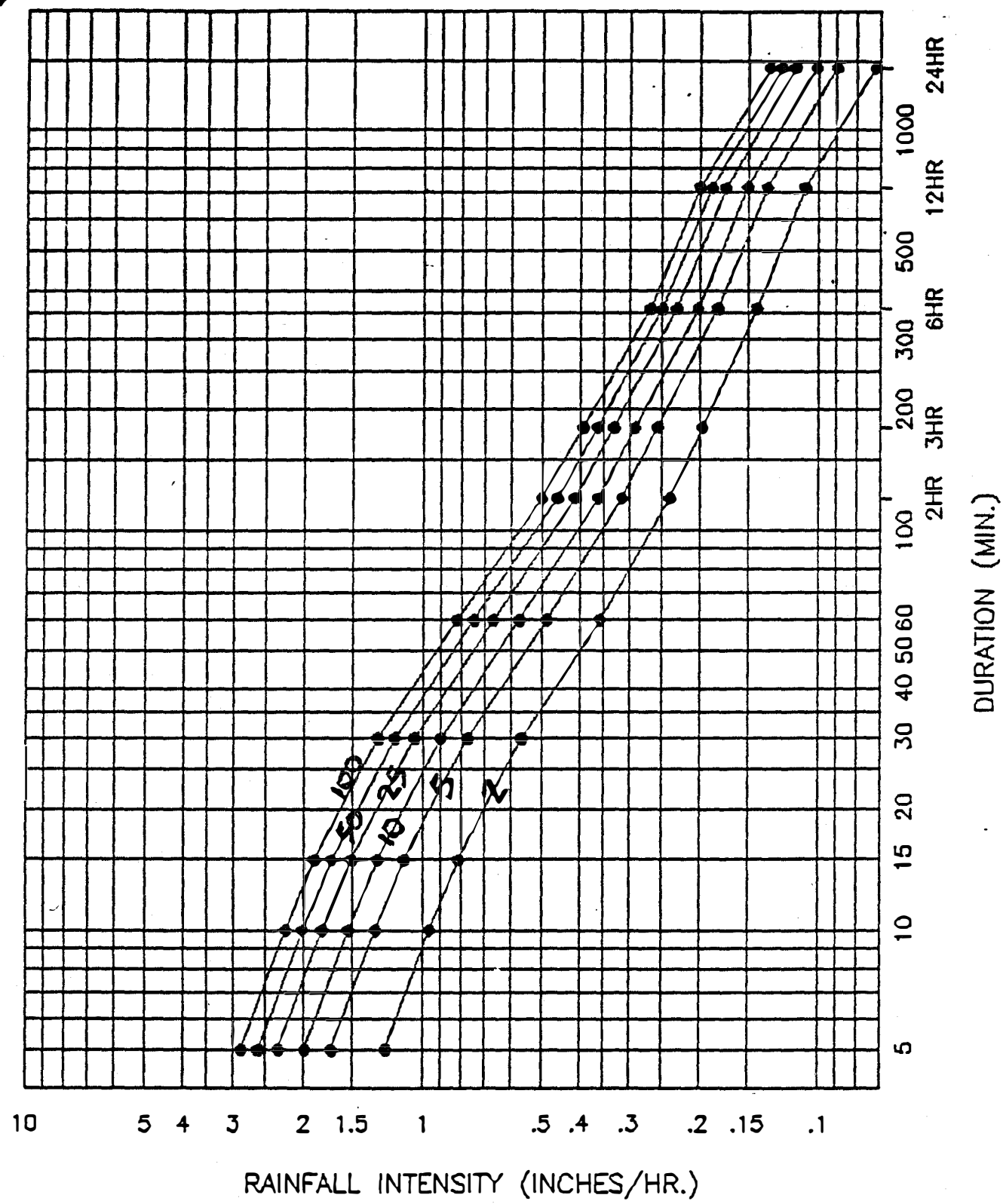
STORM SEWER COLLECTION SYSTEM
REPLACEMENT COST ANALYSIS

COLLECTION SYSTEM

E) Culverts(Continued)

18"	1,220	$38.88	$47,433.60
24"	1,685	$48.52	$81,756.20
27"	50	$60.81	$3,040.50
30"	200	$71.07	$14,214.00
36"	850	$82.64	$70,244.00
48"	1,660	$104.95	$174,217.00
58"	100	$131.51	$13,151.00
TOTALS	8,195		$476,127.40
TOTAL SYSTEM REPLACEMENT COST			$6,546,274.60

* Average depth of trench = 5 Ft.



DESIGNED: DLS DRN: DLS CHECKED: DWO PROJECT NO. 229 DP 12	DAVID J. NEWTON ASSOCIATES INCORPORATED CIVIL & GEOLOGICAL ENGINEERING 1201 S.W. 12TH AVE., SUITE 620 PORTLAND, ORE. 97205 • 228-7715	RAINFALL INTENSITY DURATION & FREQUENCY CURVES CITY OF TROUTDALE Storm Drainage Master Plan	DATE DEC. 1989 FIGURE 5.1

229 DP 12 - TRT-RAINLONG

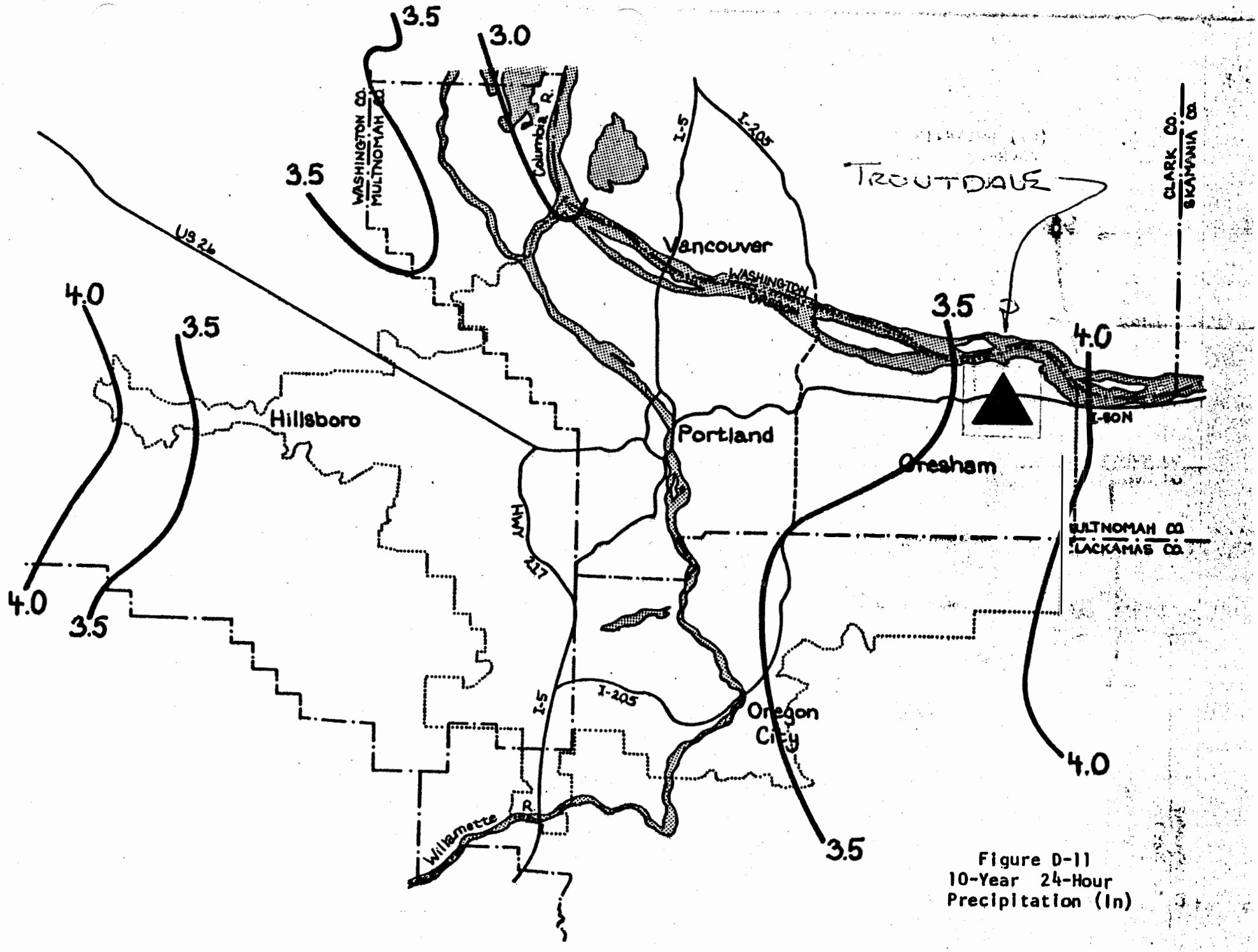


Figure D-11
10-Year 24-Hour
Precipitation (In)

The catch basin and drywell facilities are generally maintained by the City's street division. The collector, trunk and interceptor lines are maintained by the City's wastewater collection and treatment division. Again, the other affected jurisdictions work with us as needed. Multnomah County and the State maintain those systems within their rights-of-way in cooperation with the City.

.423 CONDITION ASSESSMENT

The existing system generally meets the storm water collection and disposal requirements of the City. It is relatively new with the majority installed since the mid 1970's. Except for routine renewal and replacement projects, no major replacements or upgrades to the existing system are anticipated. New systems covering areas of the City yet undeveloped are expected and will be identified in the pending Master Drainage Plan.

.430 PUMPING AND OUTFALL FACILITIES

.431 GENERAL

The City's pumping and outfall facilities fall under two jurisdictions. The gravity system north of the I-84 interstate is maintained and operated by the City of Troutdale. All outfalls on this system were designed to meet then current standards established by state and federal guidelines. The City requires total separation of its sanitary and storm system and special grit/grease collectors on parking lot drains. These standards ensure a water quality discharge in compliance with established standards.

.432 DETENTION AND RETENTION

There are a number of detention/retention facilities throughout the City. These are generally incorporated into the City's open space/park system and are well maintained and attractive. These systems meet the requirements of the existing discharge levels and the pending Drainage Master Plan will address any future facility needs of this type.

.433 PUMPING

The Sandy Drainage District maintains a pumping facility on Marine Drive adjacent to the Columbia River (the northeast corner of Section 24). This

facility pumps storm water collected in that area bounded by the I-84 interstate freeway on the south, the Columbia River on the north, the Sandy River on the east, and 223rd Avenue on the west. The Arata Creek drainage, which includes portions of the City north of the interstate freeway, also discharges to this pumping facility. The pump station and that area previously described is under the jurisdictional control of the Sandy Drainage District.

The drainage district has worked with the City in the past to establish interim drainage guidelines and will be working with the City on the preparation on our Master Drainage Plan.

The districts pumping facilities are adequate to meet current and short term anticipated needs. Their long term pumping needs, as affected by Troutdale, will be established through the aforementioned Master Drainage Plan.

.434 OUTFALL

The City of Troutdale's drainage outfall systems are scattered along the Beaver Creek drainage and the Sandy River. These outfall facilities are composed of concrete structures and/or gabion or rip-rap bank protected systems. They are generally located within the open space and natural set aside areas and are well maintained.

Their useful life and future replacement is a function of natural erosion and deterioration. Their overall condition is very good and there are no immediate plans for any replacements.

.435 CONDITION ASSESSMENT

The Troutdale storm drain system is relatively new. Portions of it were installed during the development and subdivision process, having its peak of activity in the mid 1970's. Additional facilities have been built to accommodate future growth and provide controlled interceptor and outfall facilities for those smaller neighborhood systems. Except for routine renewal and replacement and maintenance activity, no major replacement of facilities is expected and their condition can generally be classified as very good.

2.500 TRANSPORTATION

.510 GENERAL

Over the past three decades, the City of Troutdale has grown from a small agricultural community of a few hundred to a full service city of over 7200 in 1988. The agricultural emphasis has changed with this population growth..... Land has been absorbed for residential, commercial and industrial use. The majority of the population migrates daily to work centers in the industrial areas along the Columbia south shores or to employment centers in Portland. However, recent commercial and industrial growth in the City has begun to increase employment opportunities locally.

The daily commuter migration is predominately from east to west on the I-84 interstate freeway. Additional east west traffic is supported by the County arterial (regional) road system. The north south movement to I-84 and local commercial and industrial employment centers is predominately supported by the County (regional) arterial system. The map entitled "Functional Classification of Trafficways" depicts the vehicular and bicycle circulation system within and through the City, and the map entitled "Road Jurisdiction" identifies the source of facility ownership.

The 1988 Regional Transportation Plan describes a number of trends affecting the transportation network in the east Multnomah County area, and to a much more limited degree in Troutdale. However, because of Troutdale's strategic location straddling the I-84 freeway which provides east west access to the community, and the county major arterial (257th Avenue) which bisects the City and provides the major north to south movement, our local needs are very well met. Additional major transportation facilities generally provide an excellent level of circulation within as well as through the City, these include major and minor county arterials and collector streets, together with the City neighborhood and local facilities.

The State controls the Columbia River Highway through the downtown Troutdale core area and the Historic Columbia River Highway as well.

The City of Troutdale participates with a variety of agencies for the planning, construction, and maintenance of road and other transportation facilities regionally and within its jurisdictional boundaries. The City provides for the planning, construction and maintenance of its own facilities which include over 24.1 centerline miles of local and neighborhood collector roads. Multnomah County's division of transportation maintains over 2.3 miles of major and minor arterial roads, and some neighborhood collector roads as well. The State of Oregon Department of Transportation is responsible for about 1.2 centerline miles of interstate freeway and over 3.7 centerline miles of major collector and scenic route facilities. These facilities are shown on the map "Road Jurisdiction."

The Metropolitan Service District (METRO) is the regional planning body responsible for the distribution of federal funds for additions to and improvements on transportation facilities. Their planning process actively involves all of the affected jurisdictions in the Tri-County area surrounding the Portland Metropolitan area, together with representatives of Clark County, Washington. Local input is provided by individual City planning activities tied to the East Multnomah County Transportation Committee, then the Metro bodies composed of the Transportation Alternatives Policy Advisory Committee and the Joint Policy Advisory Committee and eventually the Metro Council itself complete the planning and funding process. This planning and fund distribution process has proven to be generally equitable and effective.

The public transportation district (Tri-Met) serves as a three county providor of light rail, feeder bus, special transportation, ride share programs and park and ride lots throughout the three county Portland Metropolitan area. This organization prepares a five year transit development plan and annual service plan which include _____ miles of bus routes in the City of Troutdale. The map "Bus Routes" depicts these facilities. Troutdale is a "end of line" location for both bus routes 24 & 80.

Heavy rail access to the City is provided by Union Pacific Railway with its main line and spur routes bisecting the City along its major east west transportation corridor. In addition, the Port of Portland provides a general aviation airport within the city limits, and river barge traffic is maintained outside of the city limits, but within

our planning area, just north of the City on the Columbia River. Most of the maps contained in this Public Facilities document depict the location of these facilities.

.520 TRAFFICWAYS

Almost all standard functional classifications of roads are located within the City of Troutdale. These include arterial streets, collector, and local together with their sub-classifications. Some of these facilities are specifically designed to accommodate bike routes as well. The jurisdictions controlling these facilities include the State of Oregon, Multnomah County, and of course, the City of Troutdale.

The funding sources for the operation and maintenance of locally controlled facilities is primarily derived from the State Gas Tax and subsequently the State Gas Tax Street Fund established in the budget. A ten year budget history is depicted in the table "State Gas Tax Street Fund." In addition, the graph "Gas Tax Resource and Projections" depicts anticipated future funding sources to finance the construction, operations and maintenance of those road systems under the City's jurisdiction.

.521 ARTERIAL STREETS

There are approximately 5.5 centerline miles of arterial streets within the City. All of these facilities fall under the operation and maintenance jurisdiction of Multnomah County.

A major north south arterial facility is provided by 257th Avenue which has a capacity of _____. This regional facility provides direct service from the I-84 interstate freeway to the City of Troutdale, Mount Hood Community College, other portions of Gresham and eventually to U.S. Highway 26 (the Mount Hood Highway). Future plans call for the improvement of this roadway in the City of Gresham to a comparable level of service as provided by that section in Troutdale and improved access to Highway 26. The timing of such improvements have not yet been finalized and are affected by the proposed Mount Hood Parkway currently under route selection and environmental impact analysis. The Mount Hood Parkway will be further discussed in the Needs and Requirements section of this Public Facilities Plan.

STREET INVENTORY BY CLASSIFICATION

ROAD CLASSIFICATION	QUANTITY (LINEAR FT)	COST PER (LINEAR FT)	TOTAL REPLACEMENT COST
Freeway *	6,500	$1,700.00	$16,050,000.00
Major Arterial	16,165	$475.00	$7,678,375.00
Minor Arterial	12,880	$325.00	$4,186,000.00
Major Collector	46,505	$225.00	$10,463,625.00
Neighborhood Collector	42,390	$200.00	$8,478,000.00
Local	53,140	$135.00	$7,173,900.00
Cul-De-Sac	23,780	$100.00	$2,378,000.00
Private	7,260	$20.00	$145,200.00
Scenic	6,130	$225.00	$1,379,250.00
TOTALS	214,750		$57,932,350.00

* Includes split diamond interchange

Stark Street services as a major arterial providing east west circulation in the region and through the City of Troutdale. This roadway, in proximity to its intersection with 257th Avenue, has a capacity of _____. This arterial was recently improved from 242nd Avenue to 257th Avenue providing a five lane cross-section together with bicycle lanes, bus turnouts and sidewalks on both sides of the street. This roadway is reduced to a major collector from Troutdale Road east.

Minor arterials in the City include Halsey Street, Southwest Cherry Park Road, 242nd Avenue, and 244th Avenue. Each of these facilities currently provide very good service levels to the City and the region. However, 242nd Avenue requires improvements to accommodate increased traffic loads to and from the Interstate I-84 and the City of Gresham. An improvement project has been proposed to accommodate these additional pressures.

.522 COLLECTOR STREETS

There are approximately 16.8 centerline miles of collector streets within the City of Troutdale. All those facilities classified as major collectors fall under the operational and maintenance jurisdiction of Multnomah County. The bulk of the minor arterial street system falls under the operational and maintenance jurisdiction of the City of Troutdale. Approximately .7 centerline miles of neighborhood collectors fall under the jurisdiction of Multnomah County and 7.3 centerline miles are controlled by the City of Troutdale.

These facilities serve to gather traffic within neighborhoods and feed it to the major collector and arterial street systems in the community. All of these collector roadways provide a very good level of service for the community. However, some of these roadways are not yet constructed to established County or City standards. These standards require adequate sidewalks and bicycle lanes for the sheltered protection of pedestrian and bicycle traffic.

.523 LOCAL STREETS

There are approximately 14.6 centerline miles of local streets and cul-de-sacs within the City. Most of these facilities, except for a few in the older neighborhoods of the community, have been constructed to current standards. These facilities all fall under the operational and maintenance

STATE GAS TAX STREET FUND

8/11/87

CITY OF TROUTDALE - STREET FUND

TOTAL REVENUE ALLOCATION

HISTORY & PROJECTIONS W/ 1988 ROADS FINANCE BILL

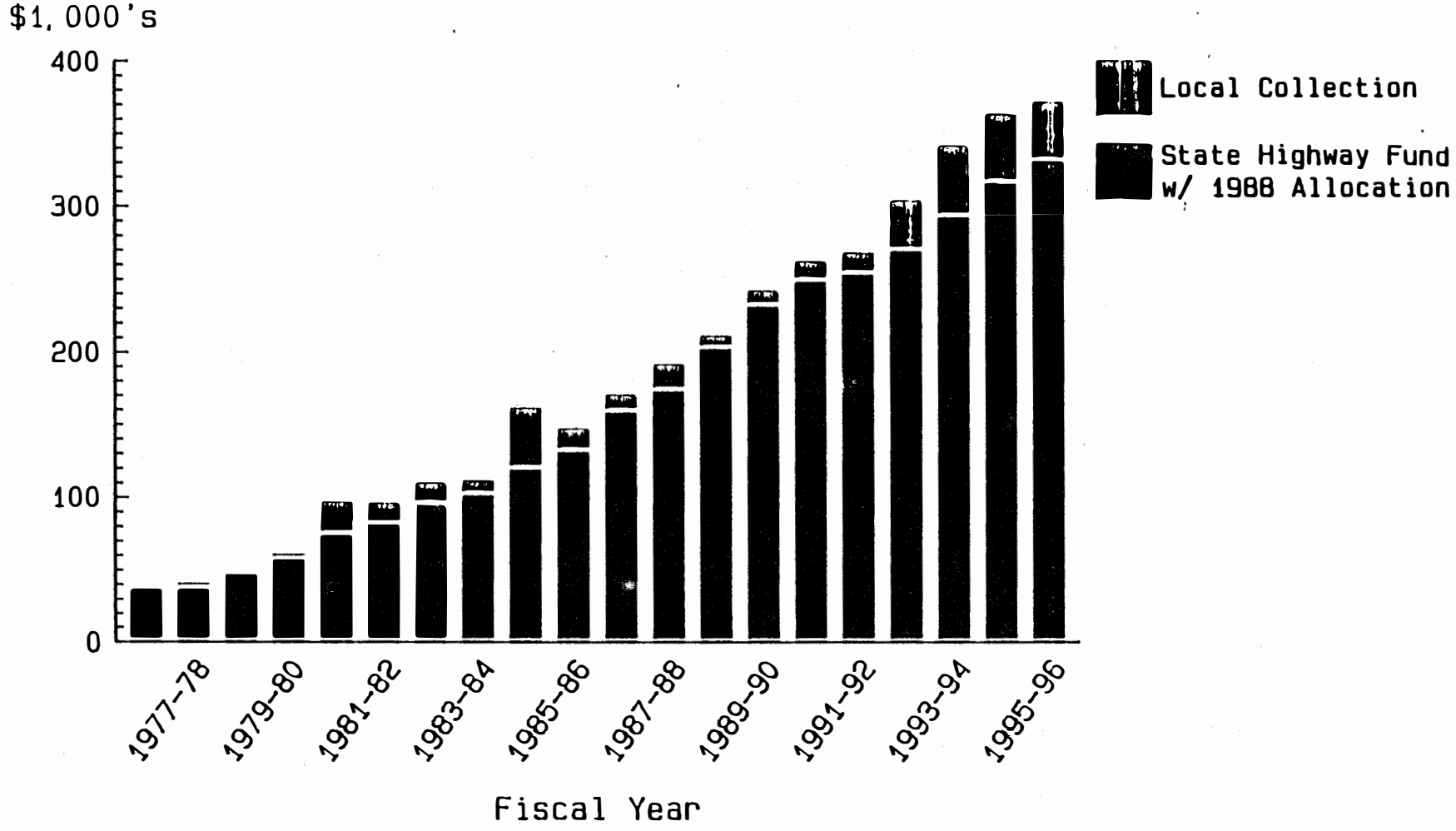
FISCAL YEAR	POPULATION	HOUSING STOCK (D.U.)	LOCAL RESOURCE	STATE RESOURCE	TOTAL TO STREET FUND	$ / PERSON
1976-77	2,730	845 (Est.)	51	36,544	36,595	13.40
1977-78	2,990	926 (Est.)	3,481	36,972	40,453	13.53
1978-79	4,100	1,267	1,240	46,840	48,080	11.73
1979-80	5,150	1,602	4,157	56,605	60,762	11.80
1980-81	5,908	1,765	23,359	73,657	97,016	16.42
1981-82	6,235	1,888	15,195	80,851	96,046	15.40
1982-83	6,545	1,989	15,572	94,289	109,861	16.79
1983-84	6,640	2,087	10,344	101,202	111,546	16.80
1984-85	6,850	2,137	42,611	118,908	161,519	23.58
1985-86	6,890	2,157	16,244	130,906	147,150	21.36
1986-87	7,095	2,196	12,970	157,932	170,902	24.09
1987-88	7,213	2,233	19,005	172,900	191,905	26.61
1988-89	7,350	2.268	9,500	202,000	211,500	28.78
1989-90	7,485	2,310	11,200	231,000	242,200	32.36
1990-91	7,650	2,360	14,200	248,000	262,200	34.27
1991-92	7,800	2,410	15,200	253,000	268,200	34.38
1992-93	8,300	2,560	34,600	269,000	303,600	36.58
1993-94	9,000	2,780	49,300	292,000	341,300	37.92
1994-95	9,700	2,990	48,000	315,000	363,000	37.42
1995-96	10,200	3,150	41,200	330,000	371,200	36.39

- No CPI Adjustment
- Population & Housing Stock Records & Projections Are For July 1st

CS44:37

Total Collection Resource Allocation

City of Troutdale - Streets Fund (05.00)



- No adjustment made for CPI
- Historical allocation from City & ODOT records
- Projections based on City & ODOT models

jurisdiction of the City, and no deferred maintenance is booked for them.

.524 CONDITION ASSESSMENT

Almost all of the roadways under Multnomah County's jurisdiction are maintained for an adequate level of service. There is little deferred maintenance on these facilities in general. However, portions of southwest Hensley, 262nd, and Troutdale Road require maintenance overlays and/or other improvements to being them up to current standards for their functional classifications. As development takes place adjacent to these, and other County facilities within the City, improvements are required which (on a piece meal basis) eventually result in the functional classification standards being met.

The State maintained I-84 freeway is currently under design for widening and other improvements scheduled for the mid 1990's. These improvements will increase the cross-section by one lane in each direction and provide improvements to the split diamond interchange in Troutdale. The State portion of 257th Avenue from the Columbia River Highway to the Interstate is substantially substandard in cross-section and is scheduled for improvements in the early to mid 1990's as is the Union Pacific Railroad Overpass. These improvements will result in a five lane cross-section, the same as the balance of 257th Avenue to the south. The State owned and maintained facility, Columbia River Highway, is poorly maintained and generally is in substandard condition. The City continues in its attempts to work with the State for improvements of this facility through its downtown core area. This roadway has reached a condition of deferred maintenance requiring total reconstruction. Conditionally this facility is the worst in the City.

The only streets under the operational and maintenance jurisdiction of the City of Troutdale with deferred maintenance are those that are currently scheduled for reconstruction. The balance of the road system has no deferred maintenance and a conditional assessment is presented in the table "The City of Troutdale Surface Street System/Visual Rating." This table evaluates all City roadways.

The City annually reviews a maintenance contract with Multnomah County to provide for a full range of road surface maintenance services. This

ROAD VISUAL (V) RATING SCHEME

1 = A road that has a surface that is relatively new.

1+ = A road that has a surface that is starting to show some wear.

2 = A road that is showing some signs of distress such as loss of fines. It indicates it might have some cracking in the next five years.

2+ = A road that has failures such as joints cracks, utility service cracks.

3 = A road that has cracks that are extensive enough to require some maintenance grinding plus crack sealing.

3+ = A road that is on the borderline of needing a new surface. Maintenance grinding and crack sealing may extend life for another year or two.

4 = A road that should be surfaced immediately.

4+ = A road that has the highest priority for resurfacing among all selected.

5 = A road that should be looked at for reconstruction versus resurfacing.

6 = A road that is beyond our capability to maintain and is turned over to Engineering for reconstruction.

CITY OF TROUTDALE VISUALS
Conducted by: Don Hauskins & Bob Thomas
January 1990

V Rating 1990	
1+	**Stott Terr.**, Stark St. - Cul-de-sac
1+	**32nd St.**, Stott Terr. - Dead End
3	**Evans Ave.**, Stark St. - Sweetbriar Ln. Crack sealed and grinder patched 1987, 1988, and 1989.
2	**Lewis Ct.**, Evans - Cul-de-sac. Crack sealed 1987.
2	**33rd St.**, Evans - Cul-de-sac
1	**36th St.**, Evans - Pelton. Overlayed 1989.
1	**Helen Ct.**, 36th St. - Cul-de-sac. Overlayed 1989.
1	**Pelton Ave.**, 35th St. - Sweetbriar. Overlayed 1989.
2	**Pelton Ave.**, Evans - 35th St. Crack sealed 1987.
2+	**34th Circle**, Pelton - Cul-de-sac. Crack sealed 1987.
2	**35th St.**, Pelton - Dead end. Crack sealed 1987.
1	**35th Circle**, Pelton, - Cul-de-sac. Overlayed 1989.
1	**36th Circle**, Pelton, - Cul-de-sac. Overlayed 1989.
1	**Pelton Circle**, Pelton, - Cul-de-sac. Overlayed 1989.
5	**Sweetbriar Ln.**, Troutdale Road - dead end S. of Pelton. 1/2" and 1/4" sealed in 1987 to hold until road can be reconstructed. Crack sealed 1988 and 1989. Additional skin patching needed.

4116V

V Rating 1990	
5	**Harlow Ct.**, Sweetbriar - Cul-de-sac. 1/2" seal 1987, 1/4" seal 1988. Needs to be reconstructed. Crack sealed 1989.
5	**Douglas Ct.**, Sweetbriar - Cul-de-sac. 1/2" seal 1987, 1/4" seal 1988. Needs to be reconstructed. Crack sealed 1989.
2+	**Clark Ct.**, Sweetbriar - Cul-de-sac. Crack sealed 1987 and 1989.
5	**40th St.**, Sweetbriar - Troutdale Rd. 1/2" seal 1987, 1/4" seal 1988. Needs to be reconstructed. Crack sealed 1989.
5	**Lenore Circle**, 40th St. - Cul-de-sac. 1/2" seal 1987, 1/4" seal 1988. Needs to be reconstructed. Crack sealed 1989.
5	**Knarr Circle**, 40th St. - Cul-de-sac. 1/2" seal 1987, 1/4" seal 1988. Needs to be reconstructed. Crack sealed 1989.
5	**Kibling Ct.**, 40th St. - Cul-de-sac. 1/2" seal 1987, 1/4" seal 1988. Needs to be reconstructed. Crack sealed 1989.
5	**Dora Ct.**, 40th St. - Cul-de-sac. 1/2" seal 1987, 1/4" seal 1988. Needs to be reconstructed. Crack sealed 1989.
5	**Stott Ave.**, Sweetbriar - 40th. 1/2" seal 1987, 1/4" seal 1988. Needs to be reconstructed. Crack sealed 1989.
5	**Celestia Circle**, Stott Ave. - Cul-de-sac. 1/2" seal 1987, 1/4" seal 1988. Needs to be reconstructed.
5.	**Stott Ct.**, Stott Ave. - Cul-de-sac. 1/2" seal 1987, 1/4" seal 1988. Needs to be reconstructed. Crack sealed 1989.
5	**Stott Circle**, Stott Ave. - Cul-de-sac. 1/2" seal 1987, 1/4" seal 1988. Needs to be reconstructed. Crack sealed 1989.

V Rating 1990	
5	**Sandy Circle**, Stott Ave. - Cul-de-sac. 1/2" seal 1987, 1/4" seal 1988. Needs to be reconstructed. Crack sealed 1989.
1	**34th Circle**, Troutdale Rd. - Cul-de-sac. Overlayed 1988.
2+	**Evans Ave.**, Stark - Lewellyn Ave. Crack sealed 1987 and 1988.
2	**29th St.**, Evans - Dead end.
2	**Lewis Ct.**, 29th St. - Cul-de-sac.
2+	**26th St.**, Evans, - Lewellyn Ave. Crack sealed 1987. Additional crack sealing needed.
2+	**Pelton Ct.**, 26th St. - Cul-de-sac. Crack sealed 1987 and 1989.
2+	**Hicklin Ct.**, 26th St. - Cul-de-sac. Crack sealed 1987. Additional crack sealing needed.
1+	**Clark Ct.**, Evans - Cul-de-sac.
2+	**23rd St.**, Evans - Lewellyn. Crack sealed 1987. Additional crack sealing needed.
1+	**Nash Ct.**, 23rd - Cul-de-sac.
2+	**Hudson Ct.**, 23rd - N. to Cul-de-sac. Crack sealed 1987.
2+	**Hudson Ct.**, 23rd - S. to Cul-de-sac. Crack sealed 1987.
1+	**22nd Circle**, Evans - Cul-de-sac.
2+	**20th Way**, Evans - Cul-de-sac S'Ely of Lewellyn
2+	**Lewellyn Ave.**, Evans - Evans. Crack sealed 1987 and 1988. Skin patched 1989. Additional skin patching needed.
1+	**19th Circle**, Lewellyn - Cul-de-sac.

V Rating 1990	
1	**21st Circle**, Lewellyn - Cul-de-sac.
2	**24th Circle**, Lewellyn - NE'ly Cul-de-sac.
2+	**24th Circle**, Lewellyn - SW'ly to Cul-de-sac. Crack sealing needed.
2+	**26th Ct.**, Lewellyn - Cul-de-sac. Crack sealed 1987. Additional crack sealing needed.
1+	**27th Ct.**, Lewellyn - Cul-de-sac.
2+	**28th Ct.**, Lewellyn - Cul-de-sac. Crack sealed 1987.
2+	**29th Ct.**, Lewellyn - Cul-de-sac. Crack sealed 1987. Additional crack sealing needed.
2+	**30th Ct.**, Lewellyn - Cul-de-sac. Crack sealed 1987. Additional crack sealing needed.
1	**Corbeth Ln.**, Troutdale Road - S. of 26th Cir. Overlayed 1989.
1	**Spence Ct.**, Corbeth Ln. - Cul-de-sac. Overlayed 1989.
1	**Spence Ct.**, Corbeth Ln. - 22nd St. Overlayed 1989.
1	**22nd St.**, Spence Ct. - Kendall Ct. Overlayed 1989.
1	**Kendall Ct.**, 22nd St. - S. of 23rd St. Overlayed 1989.
1	**23rd St.**, Kendall Ct. - Corbeth Ln. Overlayed 1989.
1	**25th Circle**, Corbeth Ln. - Cul-de-sac. Overlayed 1989.
1	**26th Circle**, Corbeth Ln. - Cul-de-sac. Overlayed 1989.
2+	**Beaver Creek Ln.**, Troutdale Road - N. of 12th St. Crack sealed and skin patched 1987 and 1988.
2+	**Harlow Ave.**, Beaver Creek - Beaver Creek. County crack sealed 1987.

V Rating 1990	
2	**Harlow Ct.**, Harlow Ave. - Cul-de-sac.
2.	**Kibling Ave.**, Beaver Creek - Beaver Creek.
1	**21st St.**, Troutdale Road - Beaver Creek. Overlayed 1987.
1+	**Dora Ct.**, 21st St. - Cul-de-sac.
1	**Sandy Ct.**, 21st St. - Cul-de-sac. Overlayed 1987.
2+	**19th St.**, Troutdale Rd. - 19th Pl. Crack sealed 1987 and 1989.
1+	**19th Pl.**, 19th St. - 18th St.
2+	**18th St.**, Beaver Creek - 18th Pl. Crack sealed 1987 and 1989.
1+	**18th Pl.**, 19th St. - 18th St.
2+	**Sandy Ct.**, 18th St.- N. to dead end.
2	**17th St.**, Beaver Creek - W. of Knarr St.
2+	**Knarr St.**, 17th St. - Cul-de-sac. Crack sealed 1987.
2	**Sandy Ct.**, 15th St. - S. to Dead End.
2+	**15th St.**, Chapman Ave. - Beaver Creek. Crack sealed 1989.
2+	**Chapman Ave.**, Troutdale Rd. - Beaver Creek. Crack sealed 1988.
2	**Harlow Ave.**, 14th - Chapman Ave.
2+	**14th St.**, Harlow Ave. - Chapman Ave. Crack sealed 1987 and 1989. Skin patched 1987.
2+	**12th St.**, 250' W. of Chapman - Chapman Ave. Crack sealed 1987. Skin patched 1987 and 1989.

V Rating 1990	
2	**Harlow Pl.**, 12th St. - N. to dead end. Crack sealed 1987.
3+	**Kibling Ave.**, 12th St. - 13th St. Crack sealed 1987, 1988, and 1989. Skin patched 1987 and 1988.
3+	**13th St.**, Troutdale Road - Kibling. Crack sealed 1987, 1988, and 1989.
3+	**12th St.**, Kibling - Harlow Ave. Crack sealed 1987 and 1989. Skin patched 1987.
2+	**Harlow Ave.**, 12th - 13th. Crack sealed 1987.
2+	**Autumn Way**, Cherry Park - Troutdale Road. Crack sealed 1987.
2	**Autumn Court**, Autumn Way - Cul-de-sac.
2+	**Harvest Pl.**, Autumn Way - Cul-de-sac. Crack sealed 1987.
1	**Kendall Ct.**, - Cherry Park - Cul-de-sac. Overlayed 1989.
2+	**Kings Byway**, Cherry Park - 7th St. Crack sealed 1987 and 1989. Skin patching 1989. Additional skin patching needed.
2+	**9th Cir.**, Kings Byway - Cul-de-sac.
2+	**8th Circle**, Kings Byway - Spence Ln.
2+	**Spence Ln.**, 8th Circle - S. to dead end. Skin patched 1989.
2+	**8th Circle**, Kings Byway - Cul-de-sac. Skin patched 1989. Crack sealed 1987 and 1989.
2+	**7th St.**, Kings Byway - Buxton Road.
2+	**4th St.**, Buxton - City Shops. Crack sealed 1988.
2+	**Sandy St.**, Troutdale Road - 3rd St. Crack sealed 1988. Additional crack sealing needed.

V Rating 1990	
2+	**Fox Dr.**, Cherry Park - Cul-de-sac. Crack sealed 1989.
2+	**Doolittle St.**, Cherry Park - Cul-de-sac. Crack sealed 1987 and 1989.
2+	**Hewitt Ave.**, Cherry Park - Wright Pl. Crack sealed 1987 and 1989. Skin patched 1989.
2+	**Wright Pl.**, Hewitt Ave. - W. of Hewitt Ave.
2+	**Wright Ct.**, Cherry Pk. - Cul-de-sac. Crack sealed 1987.
2+	**13th Pl.**, 257th Ave. - McGinnis St. Crack sealed 1989.
2	**McGinnis St.**, 13th Pl. - N. of 13th Cir.
2	**13th Circle**, McGinnis St. - Cul-de-sac.
1	**14th St.**, 262nd - Cul-de-sac. Overlayed 1988.
2+	**15th St.**, 262nd - W. to Cul-de-sac. Crack sealed 1987.
2+	**15th St.**, 262nd - E. of Kings Byway. Crack sealed 1987.
2	**Kings Byway**, 15th St. - Clara St.
2+	**Clara St.**, 15th St. - Kings Byway. Crack sealed 1987 and 1989. Skin patched 1987.
2+	**19th Circle**, 262nd - Cul-de-sac. Crack sealed 1987 and 1989. Skin patched 1989.
2+	**19th Pl.**, 262nd - Kings Byway. Crack sealed 1987 and 1989.
2+	**Kings Byway**, 19th Pl. - N. to dead end. Skin patched 1987.
Road Closed	**Fox Ct.**, Hensley Rd. - Cul-de-sac.
2+	**Wright Ct.**, Hensley Rd. - dead end. Crack sealed 1987 and 1989. Skin patched 1989.

V Rating 1990	
2+	**Laura Ct.**, Hensley - Cul-de-sac. Skin patched 1987. Crack sealed 1989.
2+	**20th Circle**, Laura Ct. - Cul-de-sac. Crack sealed 1989.
2+	**24th St.**, 257th - McGinness Ave. Crack sealed 1989.
2+	**Edgefield Pl.**, 24th St. - Cul-de-sac. Crack sealed 1987 and 1989.
2+	**Indian John Ave.**, 24th St. - 22nd St. Crack sealed 1987 and 1989.
2+	**22nd St.**, Indian John Ave. - 23rd St. Crack sealed 1987 and 1989. Skin patched 1987. Additional skin patching needed.
2+	**Mitchell Ct.**, 22nd Ave. - Cul-de-sac. Crack sealed 1987 and 1989.
2+	**Indian Mary Ct.**, 22nd Ave. - Cul-de-sac. Crack sealed 1987. Skin patched 1989.
1+	**Sundial Ave.**, 22nd Ave. - dead end S. of 24th Ave.
2+	**Latourelle Pl.**, Sundial - S'ly to dead end.
2+	**Sundial Ct.**, Sundial Ave., - Cul-de-sac.
1+	**24th St.**, Sundial Ave. - Dunbar
1+	**22nd Ct.**, 22nd St. - Cul-de-sac.
2	**Dunbar Pl.**, 23rd St. - 24th St. Crack sealed 1989.
2+	**23rd St.**, Dunbar Pl. - 242nd
2	**23rd Circle**, 23rd St. - SW'ly to cul-de-sac. Crack sealed 1987.

V Rating 1990	
2	**Brink Ave.**, 23rd St. - 22nd St.
2+	**22nd St.**, Larson Ave. - Brink Ave.
2+	**Larson Ave.**, 22nd Ave. - 23rd Ave.
2+	**Townsend Ct.**, 23rd Ave. - cul-de-sac. Crack sealed 1989.
2+	**McGinnes Ave.**, 22nd Ave. - cul-de-sac S. of 26th St. Crack sealed 1988.
1	**McGinnis Ave.**, 25th St. - S'ly to Cul-de-sac. Overlayed 1989.
1	**26th St.**, McGinness Ave. - Latourelle Pl. Overlayed 1989.
1	**Latourelle Pl.**, 26th St. - S. to dead end. Overlayed 1989.
1	**Indian Mary Ct.**, 26th St. - Cul-de-sac. Overlayed 1989.
2+	**25th St.**, McGinnis Ave. - 26th St. Crack sealed 1987 and 1989.
2	**26th St.**, 257th Ave. - Indian John Pl. Crack sealed 1989.
2	**Abbott Ct.**, 26th St. - Cul-de-sac. Crack sealed 1989.
2	**Indian John Pl.**, 25th St. - 28th St. Crack sealed 1989.
2	**26th Circle**, Indian John Pl. - cul-de-sac. Crack sealed 1989.
2	**28th St.**, 257th - W. of Charity Ct. Crack sealed 1989.
2	**Faith Ct.**, 28th St. - Cul-de-sac. Crack sealed 1989.
1	**Hope Cir.**, 28th St. - N. to Cul-de-sac.
2	**Hope Ct.**, 28th St. - S. to Cul-de-sac. Crack sealed 1989.
2	**Charity Ct.**, 28th St. - Cul-de-sac. Crack sealed 1989.

V Rating
1990

2+	**28th St.**, 257th Ave. - E. of Laura Ct. Crack sealed 1987 and 1989.
1+	**Laura Ct.**, 28th St. - Cul-de-sac, S. of 29th Way.
1+	**29th Way**, Laura Ct. - Hewitt Pl.
1+	**Hewitt Ave.**, 28th St. - 27th Way.
1+	**27th Circle**, Hewitt Ave. - Cul-de-sac.
2	**27th Way**, Hewitt Ave. - E. to dead end. Crack sealed 1989.
1+	**Laura Ct.**, 27th Way - Cul-de-sac.
1+	**Hewitt Pl.**, 28th St. - 29th Way.
2	**Halsey Loop**, Halsey St. - S. to end. Crack sealed 1989.
2	**Edgefield Ct.**, Columbia St. - Cul-de-sac.
6	**Harlow Rd.**, Columbia St. - 300' N. of Columbia. Road closed.
2+	**7th St.**, Sundial - dead end. Crack sealed 1987.
2+	**6th St.**, Harlow - Buxton. Crack sealing needed.
3+	**Dora St.**, Columbia - 3rd St. Crack sealing, grinder and skin patching needed.
4	**Jackson Park Rd.**, Grinder and skin patching needed. Recommend overlay.

maintenance contract has been both effective and efficient for the City. It offers a scale economy resulting in substantially lower maintenance costs to the City than if we were to provide those maintenance services ranging from pavement overlays to cracking sealing with our own equipment and staff. It is the City's intent to annually review this agreement and work closely with Multnomah County to achieve a compatible and comparable level of maintenance on all City and County facilities within our jurisdiction. This integrated approach to maintenance has functioned well over the past two fiscal years and appears that it will do so in the future as well.

.530 PUBLIC TRANSIT

The public transportation facilities in the City of Troutdale include two bus routes and access to the light rail system in the City of Gresham. The bus routes are depicted on the map "Bus Routes." These routes serve the City by providing stops on Stark Street, Troutdale Road, Buxton Avenue, the Columbia River Highway and Halsey Street. Connections are available for access to the light rail system and through that system to the City of Portland. Both the Halsey route (Bus #24) and the Buxton/Troutdale Road/Stark route (Bus #80) provide service throughout East Multnomah County and to the City of Portland. The level of service provided by the bus element of public transit seems to be adequate for the Troutdale community.

The light rail system, terminating in Gresham, provides a regional transportation element available to the City of Troutdale through the park and ride facilities adjacent to selected light rail stops, and by way of interconnecting bus service. Current discussions suggest the possible extension of this light rail service to include access to Mount Hood Community College and the City of Troutdale.

.540 HEAVY RAIL

The Union Pacific Railroad maintains both main lines and spur rail routes within rights-of-way in the City of Troutdale. This main line provides industrial development opportunity in those portions of the City appropriately zoned. This rail system bisects the City just north of its downtown core area. It provides excellent levels of service to the industrial locations just north of that downtown core area. The Reynolds Metals Company

3.400 DRAINAGE COLLECTION AND DISPOSAL

.410 GENERAL

The City of Troutdale has currently funded and contracted with an engineering firm to prepare a "Drainage Master Plan." This plan is not schedule for final completion and acceptance by the City until June 30, 1990. However, the Plan has identified some capital needs and requirements - a summary of which is contained in Table "Storm System Project Cost and Phasing Summary."

No "Public Facilities Plan/data sheets" are included in this section. This information will be added in an amended plan following the completion of the engineering study and its acceptance by the Planning Commission and Troutdale City Council.

.420 COLLECTION SYSTEMS

.421 The City's collection system for storm water has almost no deferred maintenance. Future projects will be required to accommodate growth and development, particularly in the low lying industrial areas in the north part of the City. These storm water collectors, trunks and interceptor systems are partially identified on the Table "Storm Water Project Costs and Phasing Summary." Additional facilities will be required throughout the City commensurate with the growth and development pressures within the affected drainage basin(s). These facilities have not been identified in detail due to the high degree of variability that different types of development place on a storm water collection and outfall system. However, the City's trunk and interceptor systems have been designed to accommodate development and growth commensurate with the City's Comprehensive Plan. These trunk and interceptor systems will be extended, modified or constructed generally commensurate with the preliminary results of the Storm Drain Master Plan.

.430 PUMPING AND OUTFALL FACILITIES

.431 GENERAL

The City maintains and operates a number of outfall facilities discharging into Beaver Creek, the Sandy River and miscellaneous intermittent stream beds and drywells. Detention/retention basins are utilized where necessary to accommodate peak runoff conditions.

.432 DETENTION AND RETENTION

The City's existing detention/retention are adequate to serve current and projected demands within the basin/subbasins for which they were designed to serve. However, substantial detention/retention facilities are necessary to accommodate the northern industrial/commercial properties in the City. These facilities will be identified in the Drainage Master Plan on the map "Storm Water Collection and Outfall System." Additional detention/retention facilities are also identified on that map.

.433 PUMPING

A major investment in new pumping facilities will be required to accommodate some existing and most future growth and development within our commercial and industrial areas in the north part of the City. These pumping facilities are located outside of the City limits and outside of our planning area boundary. However, they are located within the Sandy Drainage District which also serves a portion of the City of Troutdale (see map "Storm Water System"). The cost to construct the needed pumping facilities are depicted on the table "Storm Water System Project Cost and Phasing Summary." The assignment of cost responsibility has yet to be determined. It is assumed that the City will establish a storm drainage utility and work cooperatively with the Sandy Drainage District, Multnomah County, the City of Fairview and Wood Village to determine the participatory funding levels, maintenance and operation cost sharing, etc. The Drainage Master Plan will provide guidance and input necessary for the formation of a drainage utility and the necessary intergovernmental and interagency agreements.

.434 OUTFALL

Improvements to the City's gravity outfall systems is limited to erosion control and embankment stabilization. The construction of new gabians, riprapped embankments, headwalls, et cetera, will be considered commensurate with the conditions and needs. Most of these projects will be considered renewal/replacement, and there are no plans for major gravity outfall facilities.

The outfall facilities associated with the pumped discharge to the Columbia River will be considered

as part of the pump station upgrade, construction and/or improvement project discussed 3.433.

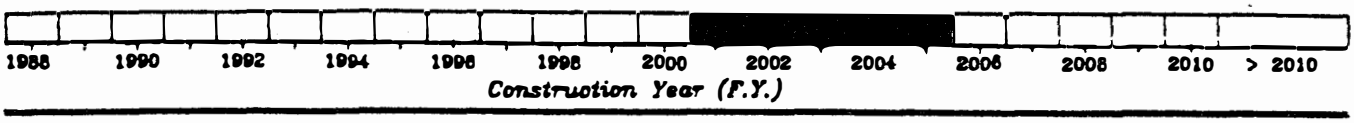
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #1

PROJECT: ARATA CREEK WOOD VILLAGE DIVERSION

ESTM TOTAL PROJECT COST: $65,000



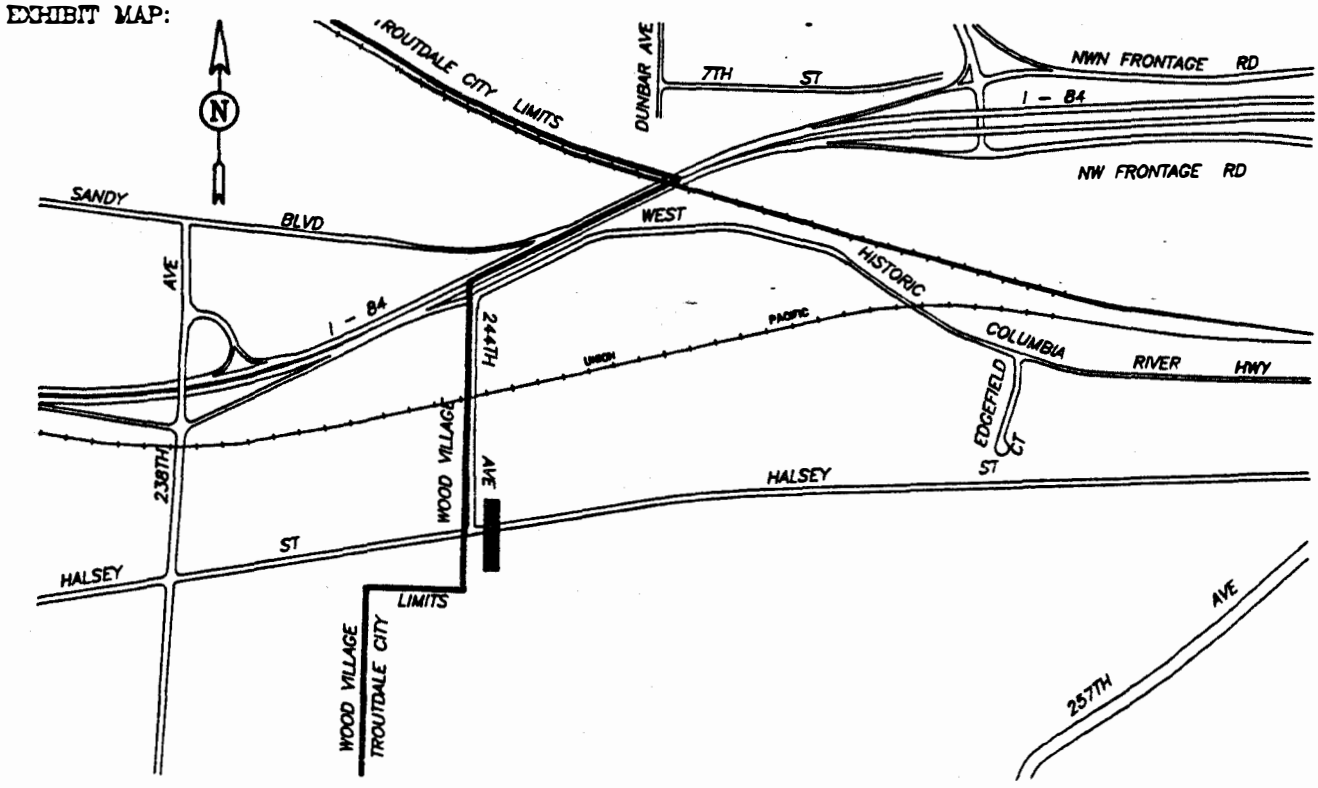
Project Description:
Install a high flow by-pass on the east side of 244th Avenue using approximately 600 lineal feet of 30" CSP.

Project Justification/Benefit:
This project will compensate for impact in increased upstream flows and route existing normal flows through current facilities in Wood Village.

Funding Notes:
This project would be funded by a future drainage utility, Capital Improvement Fund with potential participation from the City of Wood Village and from Multnomah County.

#38

EXHIBIT MAP:



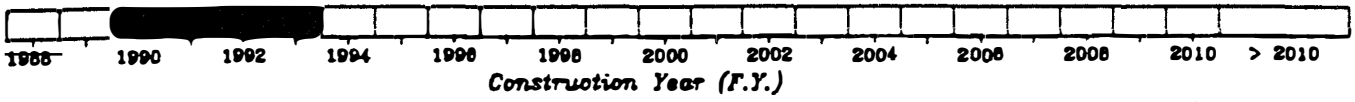
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #2

PROJECT: ARATA CREEK / COLUMBIA RIVER HIGHWAY CULVERT

ESTM TOTAL PROJECT COST: $11,000



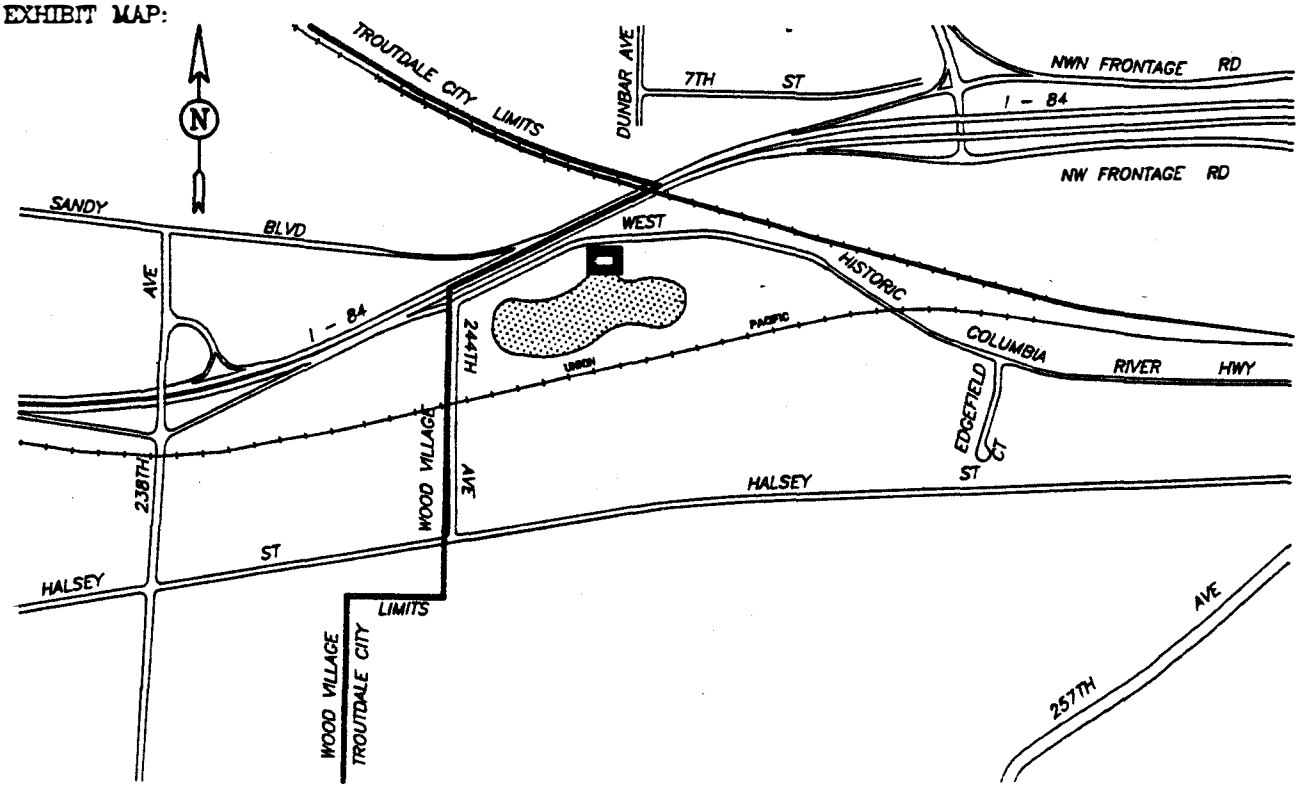
Project Description:
Install a variable inlet control structure to the existing culvert in order to expand detention opportunities.

Project Justification/Benefit:
The existing large culvert size prevents the utilization of detention opportunity and causes wastewater flow overloads further down stream.

Funding Notes:
This project would be funded by a future drainage utility, Capital Improvement Fund with potential participation from the City of Wood Village and from Multnomah County.

#39

EXHIBIT MAP:



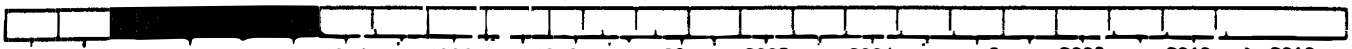
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #3

PROJECT: SOUTH FRONTAGE ROAD IMPROVEMENTS

ESTM TOTAL PROJECT COST: $42,000



Construction Year (F.Y.)

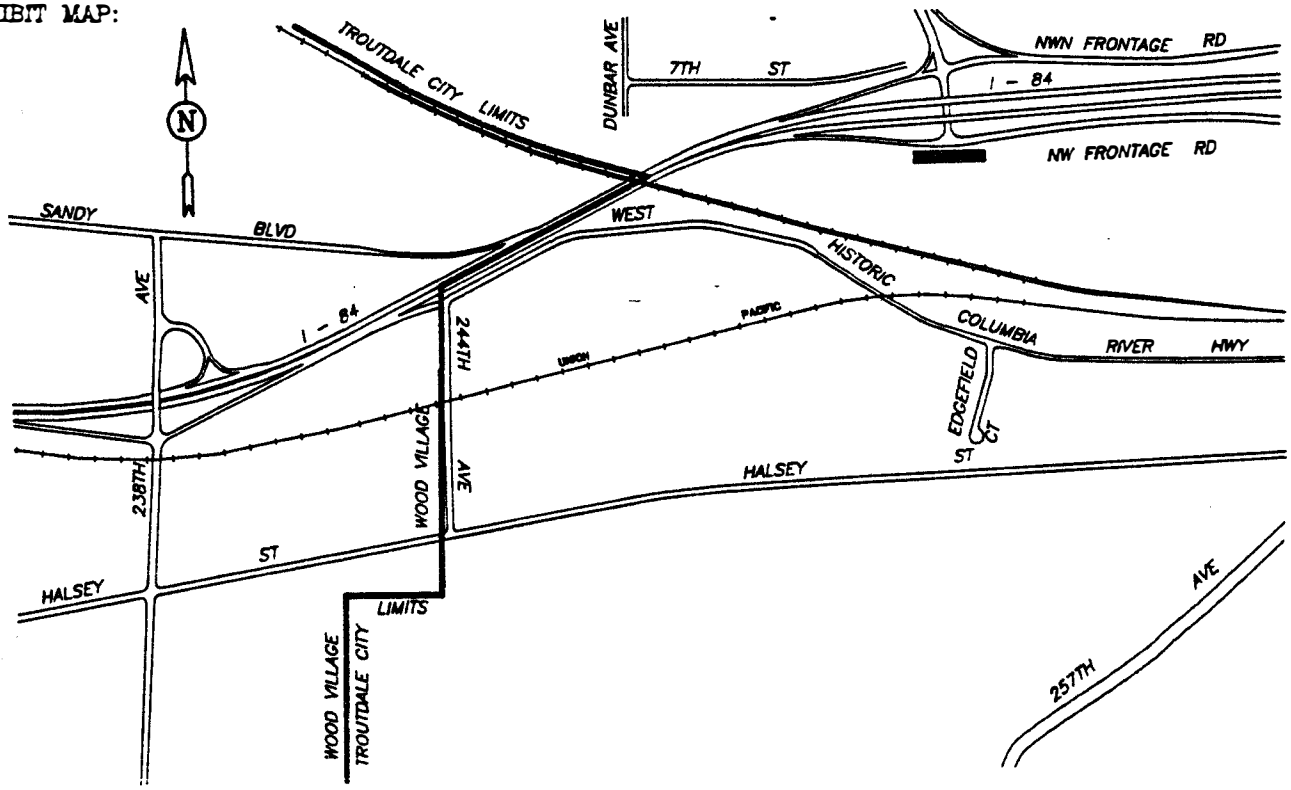
Project Description:
Install a 30" diversion structure to limit maximum hydraulic grade along the South Frontage Road and divert flows to the west interchange culvert. Replace the model access culvert with 60" CSP and construct control structure to provide off-line storage in existing wetland areas.

Project Justification/Benefit:
This project is needed to mitigate flooding potential at the west Troutdale interchange. Existing culverts are inadequate for all storm events.

Funding Notes:
This project would be funded by a future drainage utility, Capital Improvement Fund with potential participation from the City of Wood Village and from Multnomah County.

#40

EXHIBIT MAP:



CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #4

PROJECT: WEST INTERCHANGE CULVERT CROSSING

ESTM TOTAL PROJECT COST: $98,000

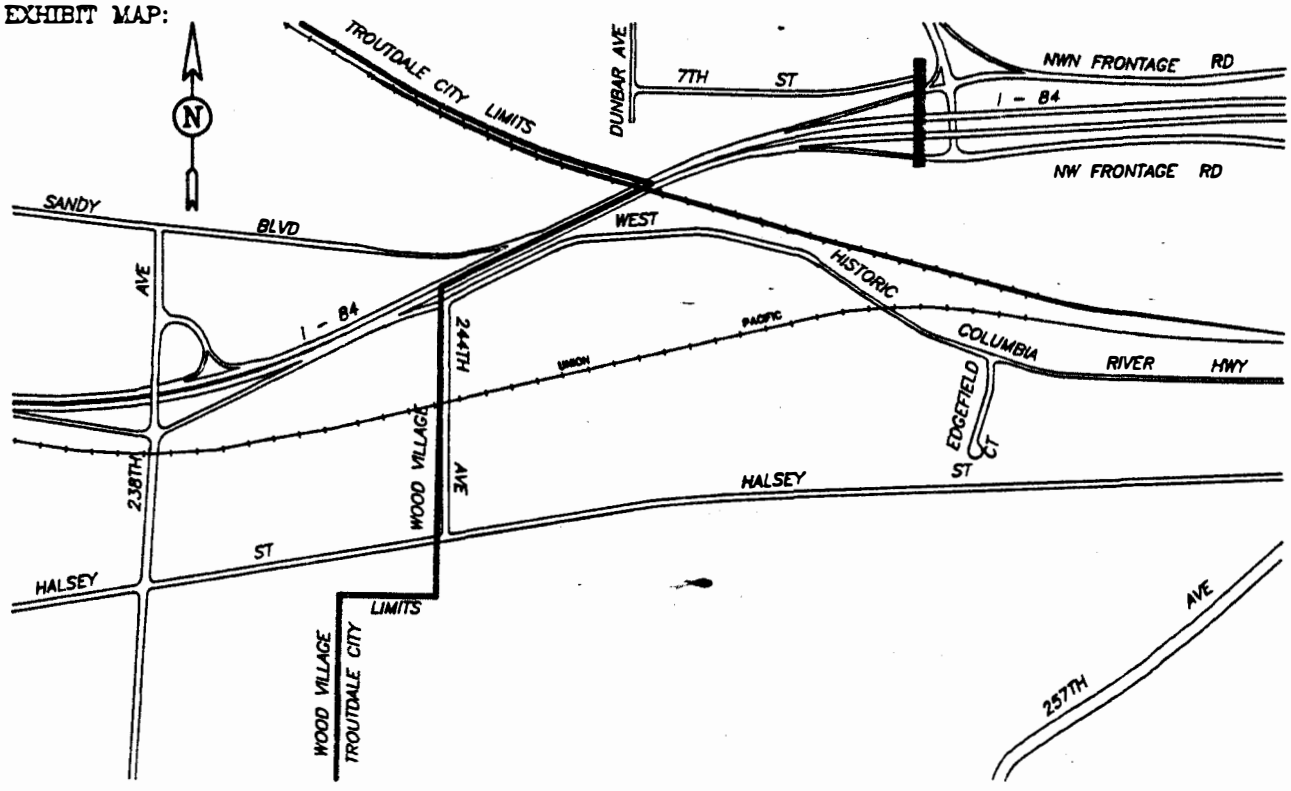
Project Description:
Install approximately 460 feet of 54" CSP.

Project Justification/Benefit:
This project will mitigate and existing inadequate capacity problem. It will reduce flooding potential to all development along the South Frontage Road.

Funding Notes:
This project would be funded by a future drainage utility, Capital Improvement Fund with potential participation from the City of Wood Village and from Multnomah County.

#41

EXHIBIT MAP:



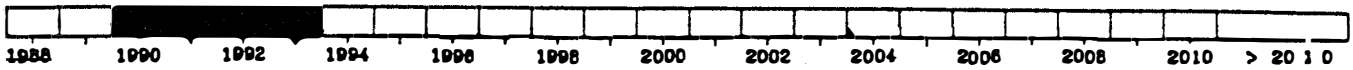
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #5

PROJECT: "B" BASIN - MARINE DRIVE DIVERSION

ESTM TOTAL PROJECT COST: $660,000



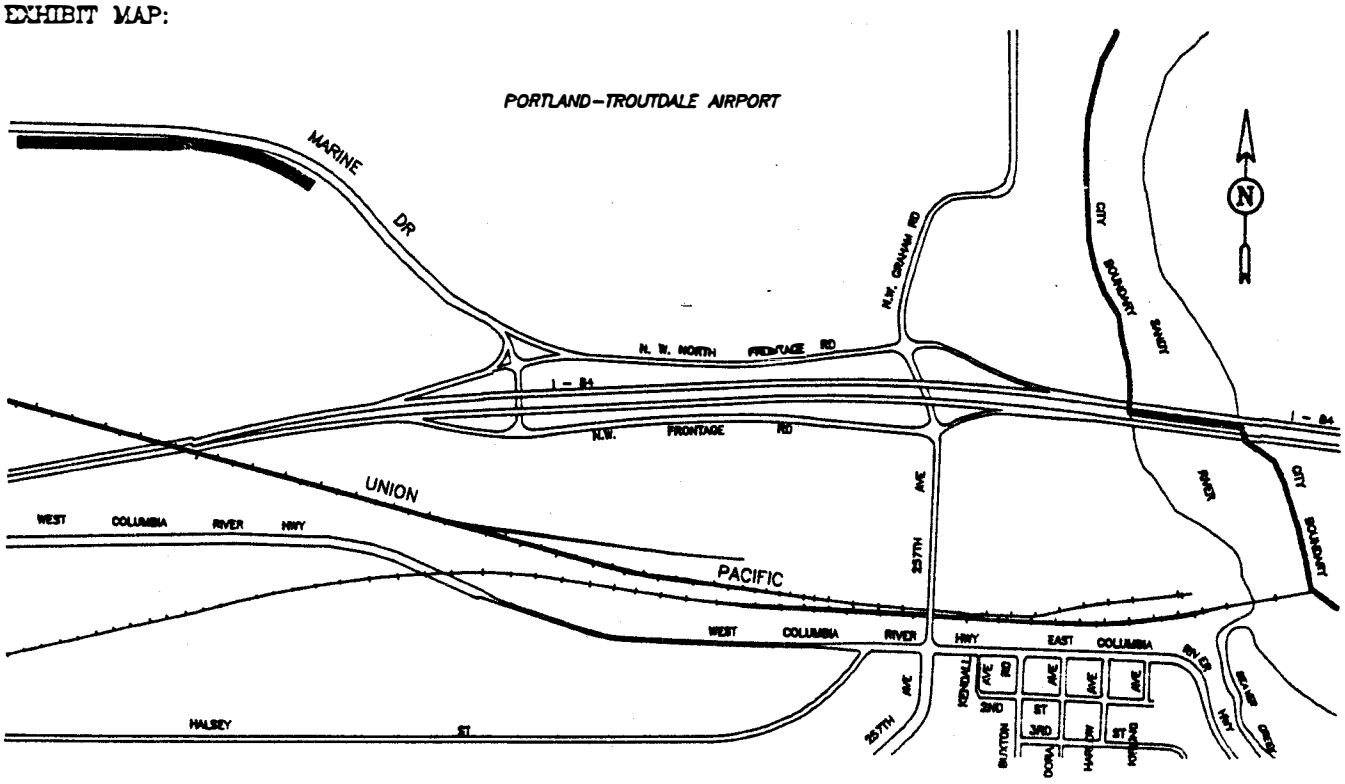
Project Description:
Install approximately 1100 feet of 66" CSP, 600 feet of 60" CSP, and 700 feet of 54" CSP along the south side of Marine Drive.

Project Justification/Benefit:
Maintenance of culverts in runway area is difficult and property south of Marine Drive do not have adequate storm drain service. In addition, airport runway culverts, airport access and Graham Road culverts are all inadequate.

Funding Notes:
This project would be funded by a future drainage utility, Capital Improvement Fund with potential participation from the City of Wood Village and from Multnomah County.

#42

EXHIBIT MAP:



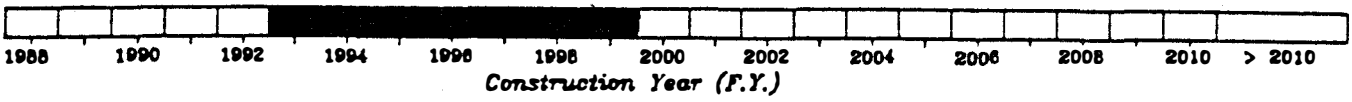
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #6

PROJECT: ARATA CREEK/MARINE DRIVE CULVERT - DITCH LINE IMPROVEMENTS AND RAILROAD SPUR CROSSING

ESTM TOTAL PROJECT COST: $595,000



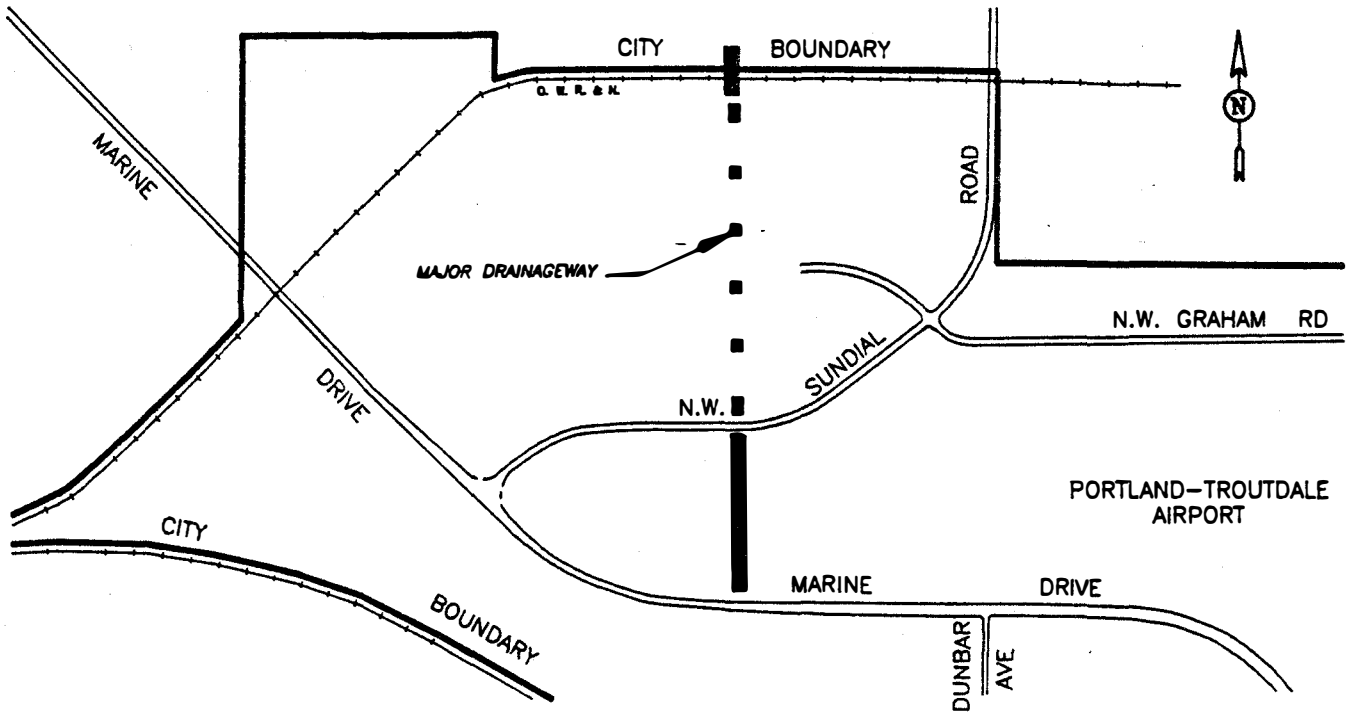
Project Description:
Install 1000 of dual 6" CSP pressure conduits, widen existing ditch by 4 feet and construct two 60" CSP culverts under the Reynolds railroad spur.

Project Justification/Benefit:
The existing system has inadequate capacity for future development. These improvements will mitigate flooding problems on low properties south of Marine Drive. These improvements are also necessary to handle additional "B" flows.

Funding Notes:
This project would be funded by a future drainage utility, Capital Improvement Fund with potential participation from the City of Wood Village and from Multnomah County.

#46

EXHIBIT MAP:



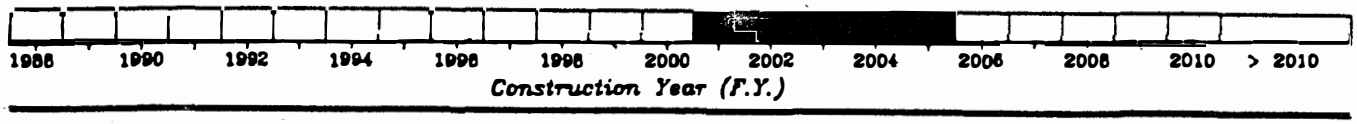
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #7

PROJECT: SALMON CREEK RAILROAD SPUR CULVERTS

ESTM TOTAL PROJECT COST: $41,000



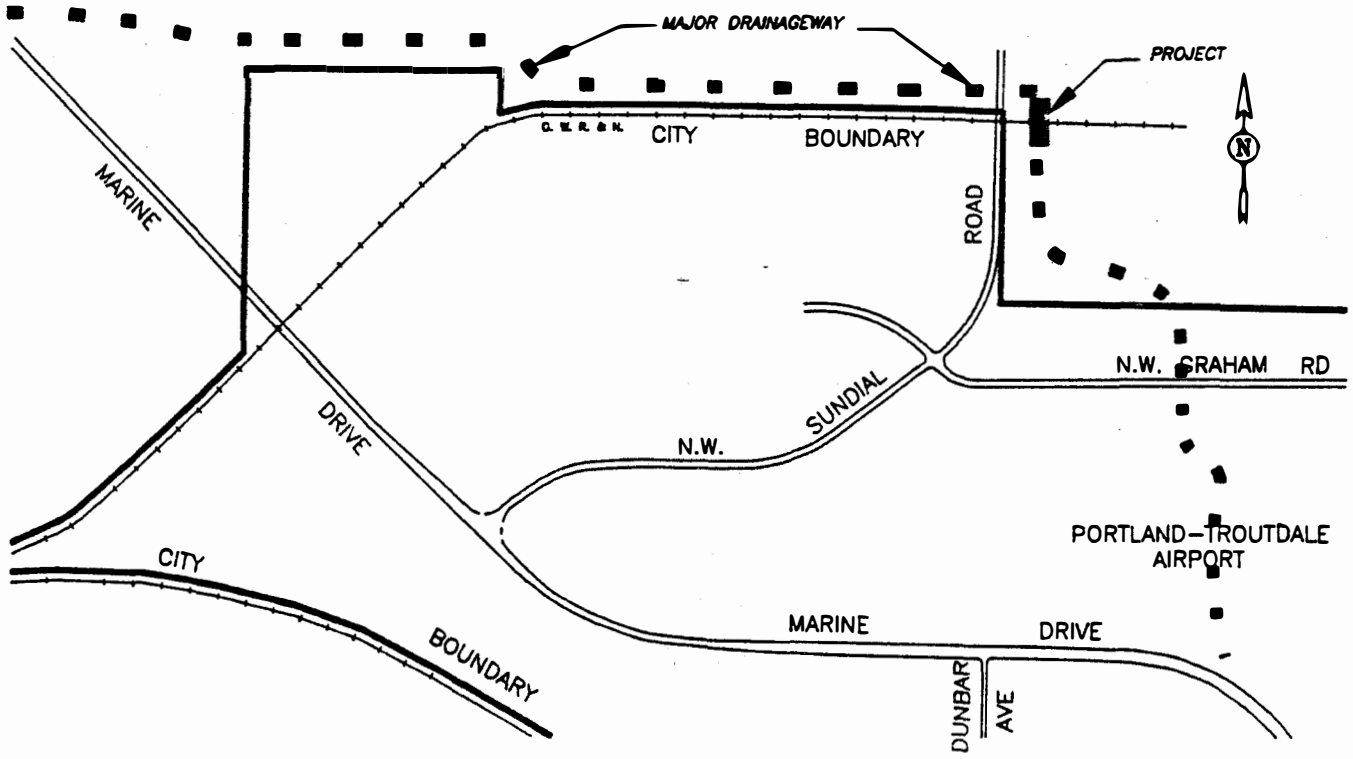
Project Description:
Replace existing culvert(s) with culverts adequately sized to handle the future 100 year flood event.

Project Justification/Benefit:
This project is necessary to mitigate flood hazards and allow for future development and the runoff that it contributes.

Funding Notes:
This project would be funded by a future drainage utility, Capital Improvement Fund with potential participation from the City of Wood Village and from Multnomah County.

#47

EXHIBIT MAP:



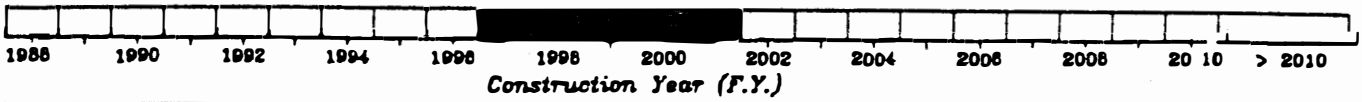
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #8

PROJECT: SALMON CREEK BASIN - SUNDIAL ROAD CULVERT CROSSING

ESTM TOTAL PROJECT COST: $62,000



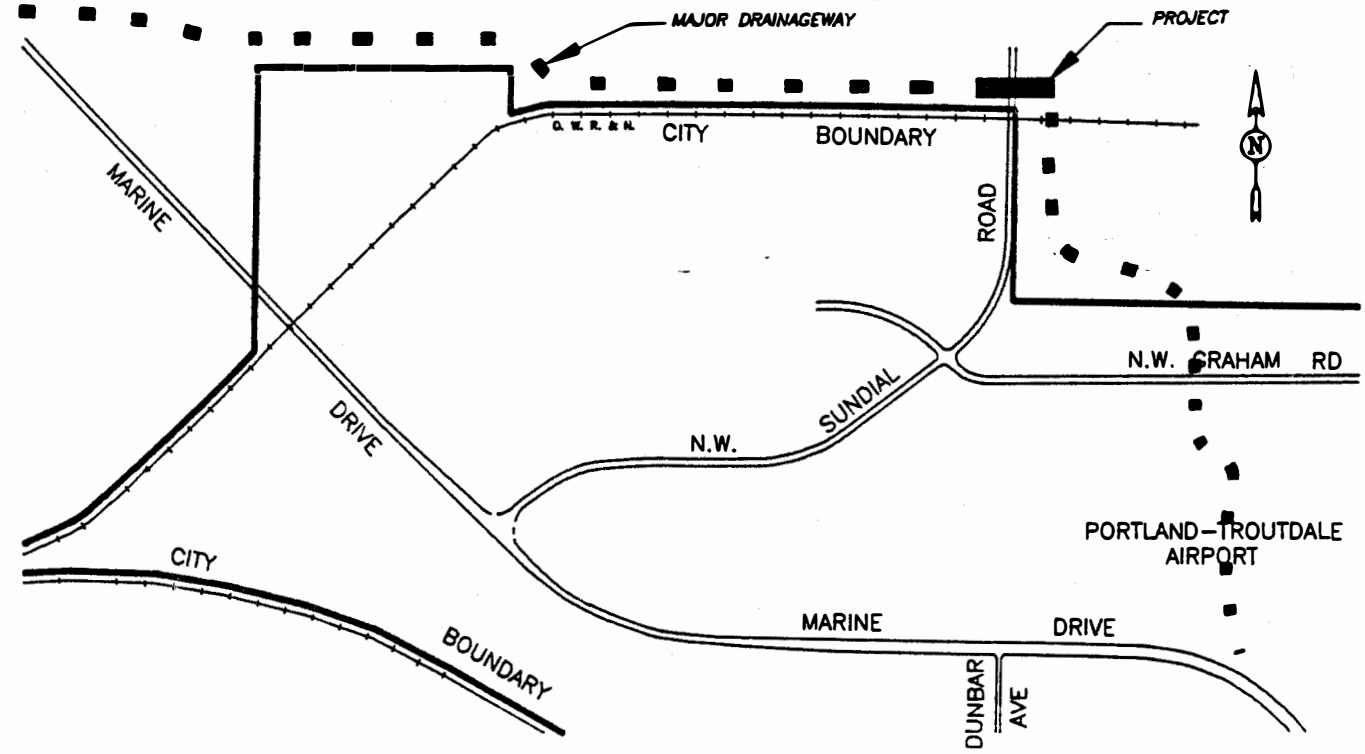
Project Description:
Replace existing culvert(s) with culverts adequately sized to handle the future 100 year flood event.

Project Justification/Benefit:
This project is necessary to mitigate flood hazards and allow for future development and the runoff that it contributes.

Funding Notes:
This project would be funded by a future drainage utility, Capital Improvement Fund with potential participation from the City of Wood Village and from Multnomah County.

#48

EXHIBIT MAP:



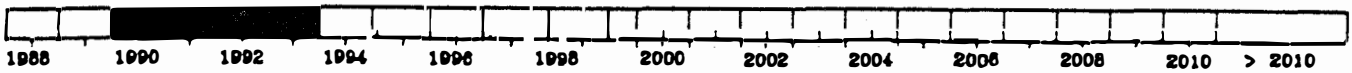
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #9

PROJECT: SALMON CREEK BASIN - PRIVATE CROSSING

ESTM TOTAL PROJECT COST: $14,000



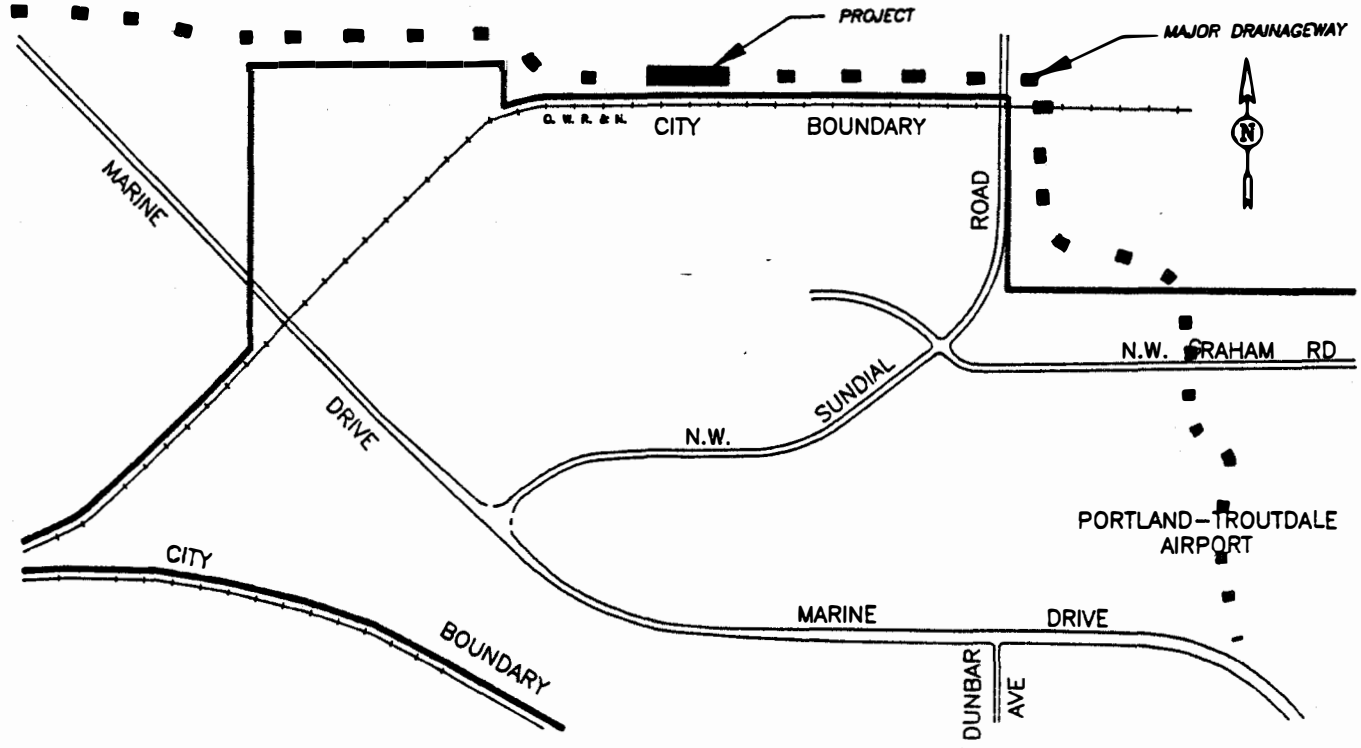
Project Description:
Replace existing culvert(s) with culverts adequately sized to handle the future 100 year flood event.

Project Justification/Benefit:
This project is necessary to mitigate flood hazards and allow for future development and the runoff that it contributes.

Funding Notes:
This project would be funded by a future drainage utility, Capital Improvement Fund with potential participation from the City of Wood Village and from Multnomah County.

#49

EXHIBIT MAP:



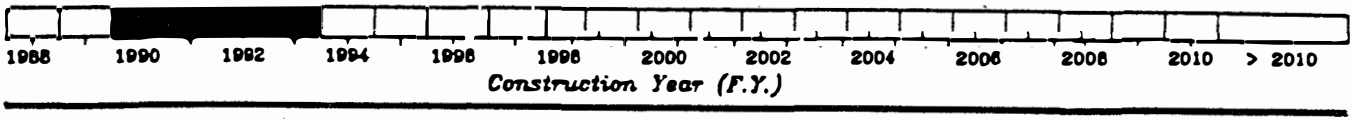
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #10

PROJECT: SALMON CREEK BASIN/MARINE DRIVE CULVERTS

ESTM TOTAL PROJECT COST: $127,000



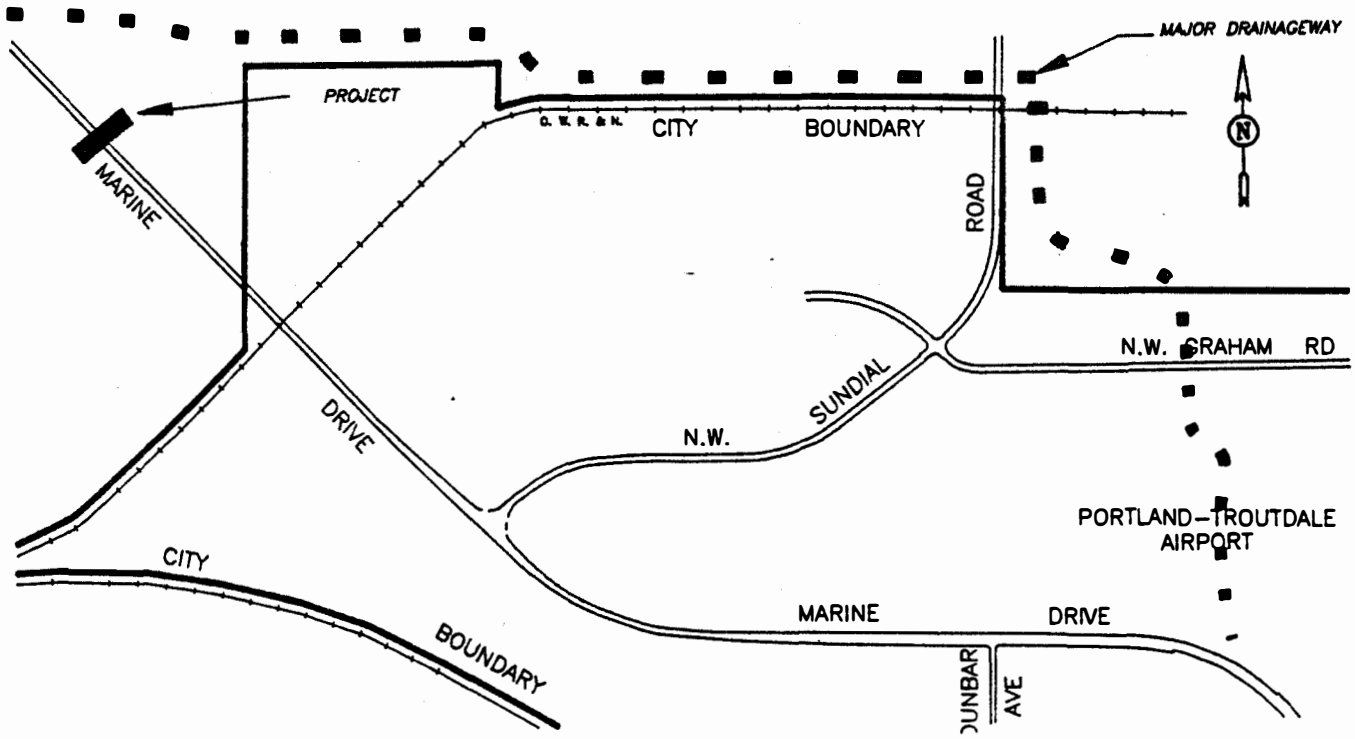
Project Description:
Construct two 66" CSP culverts.

Project Justification/Benefit:
Mitigates excessive water levels in the Sundial Road area and increases the flows to the pump station forebay.

Funding Notes:
This project would be funded by a future drainage utility, Capital Improvement Fund with potential participation from the City of Wood Village and from Multnomah County.

#50

EXHIBIT MAP:



CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #11

PROJECT: SALMON CREEK-SANDY PUMP STATION
FLOOD STORAGE ACCESS STRUCTURES AND DETENTION BASINS

ESTM TOTAL PROJECT COST: $2,200,000

1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 > 2010

Construction Year (F.Y.)

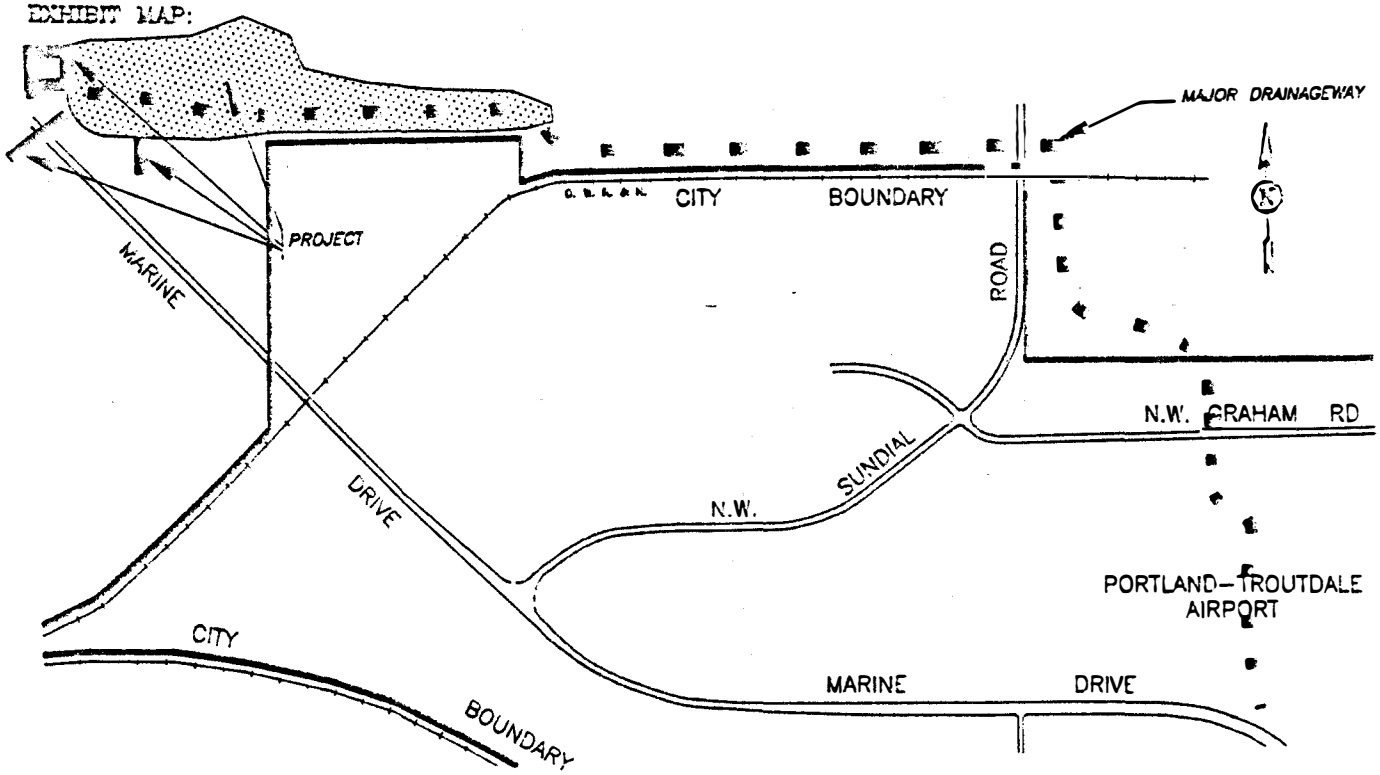
Project Description:
Improve access and diversion to detention areas, add 60 GPM pumps for near term needs and an additional 105,000 gallons GPM for medium to long term requirements and needs.

Project Justification/Benefit:
The existing structures, detention access pumping capacity, et cetera, are inadequate for near term and long range requirements. These facilities are necessary to mitigate all upstream flooding and storm water handling requirements.

Funding Notes:
This project would be funded by a future drainage utility, Capital Improvement Fund with potential participation from the City of Wood Village and from Multnomah County.

#51

EXHIBIT MAP:



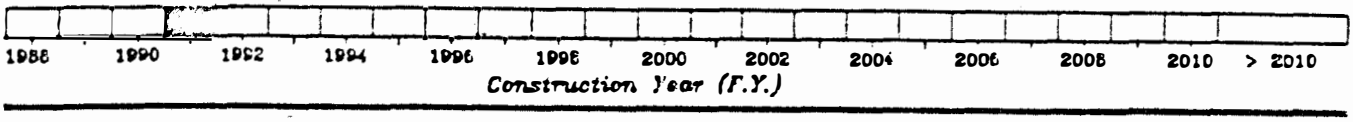
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #12

PROJECT: BEAVER CREEK GAUGING STATION

ESTM TOTAL PROJECT COST: $11,000



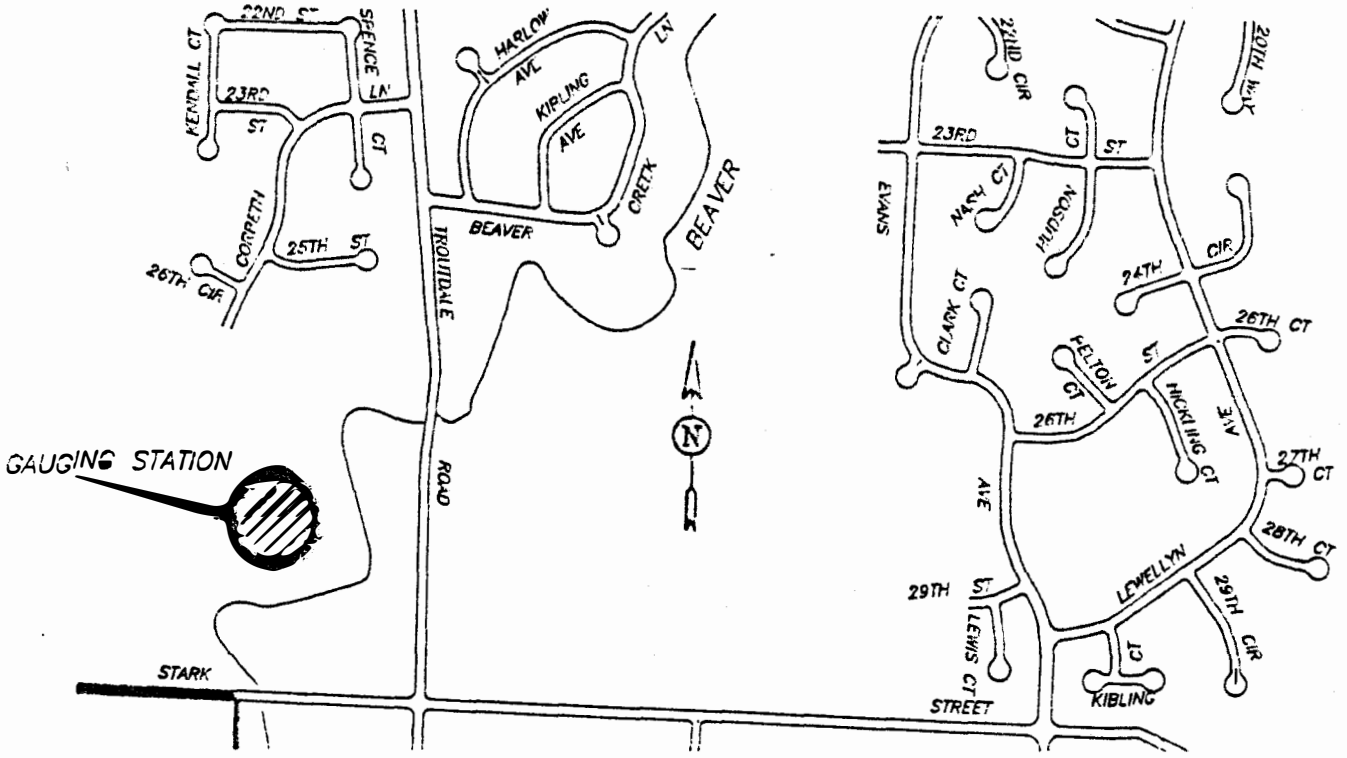
Project Description:
Install gauging station computer with recorder and all necessary appurtenances.

Project Justification/Benefit:
This facility is required to accurately determine the impact of upstream development on flow. Data will be utilized to determine mitigation measure and impact cost sharing allocation.

Funding Notes:
This project will be funded by either a (to be established) drainage utility and/or the Road Improvement Fund.

#53

EXHIBIT MAP:



as major collectors will likewise have some projects and may include functional re-classification to minor arterials.

The attached Public Facilities/data sheet depicts proposed projects within the collector category classification.

.524 STATE AND INTERSTATE SYSTEM

The Public Facilities Plan/data sheets are included for State and Interstate projects designated for or impacting the City of Troutdale.

The City of Troutdale has representatives that serve on both the Citizens Committee and the Technical Advisory Committee for the State and Interstate road systems. Troutdale has been involved in the planning process for these roads and maintains an active role to ensure that not only State wide and regional needs are met, but also that the concerns and impacts affecting the City of Troutdale are properly and adequately addressed. The Mt. Hood Parkway project, as well as I-84 widening and interchange improvement program, affects the City. Our participation assures that our concerns and considerations become an integral portion of the process and subsequently the design. The Troutdale City Council has passed two resolutions, both of which are included in this document, relating to these projects.

.530 PUBLIC TRANSIT

Tri-met provides all public transit in the region. The City involves itself in the planning and decision making process through its regional representative to the Joint Policy Advisory Committee, and its Technical Policy Advisory Committee members. It is through this public process with Metro that the final plans and programs for both bus and light rail are established.

Public Facilities Plan/data sheets are included for these facilities in a broad context. No specificity to timing or cost has been established. Reference is made to the appropriate Tri-met and Metro plans for these transit systems.

.540 HEAVY RAIL

Troutdale is served by the Union Pacific Railroad.

3.500 TRANSPORTATION

.510 GENERAL

The City of Troutdale is generally responsible for the collector and local streets within its jurisdiction. The Oregon Department of Transportation maintains responsibility for the interstate freeway system, and other road systems designated on the map "Road Jurisdiction." Multnomah County controls the bulk of the arterial system and some collectors as well. These trafficways are designated on the "Road Jurisdiction" map. State, County and local projects are all identified on the Public Facility Plan/data sheets as well as the "Public Facility Plan Road Projects" map. Any needs for additional detail on non City projects can be found in the State's Six Year Capital Improvement Program, Metro's Transportation Improvement Program, Multnomah County's Capital Improvement Program and/or other applicable documents.

.520 TRAFFICWAYS

.521 ARTERIAL SYSTEMS

The arterial street system within the City of Troutdale is controlled entirely by Multnomah County as a portion of the County's sub-regional transportation network. The attached Public Facilities/data sheets identify arterial projects that the City of Troutdale feels are necessary to serve our local needs. In addition, other projects are identified that serve the broader regional transportation needs as identified by the East Multnomah County Transportation Committee, Multnomah County and Metro.

.522 COLLECTOR STREETS

Most of the City's neighborhood collectors are controlled, maintained and managed by the City of Troutdale. The City's major collectors are maintained and controlled by Multnomah County and the Oregon Department of Transportation. The map titled "Functional Classification of Trafficways" depicts these designations.

Additions, improvements or modifications to the City's collector classification roadways is primarily restricted to new accesses as subdivision development takes place, and some upgrades of existing collector streets. Those roads designated

This main line rail system separates the community's freeway commercial as well as industrial areas from the residential and other commercial areas of the community. This heavy rail system provides spurs as necessary to service existing industrial development. Additional connectors and spurs would be provided as development driven requests so dictate.

No specific Public Facility Plan/data sheets are included for the heavy rail system. It is assumed that those areas zoned (that would allow the industrial intensity necessary to require heavy rail) would be provided that service through those development driven requests and requirements.

The City will work with the Union Pacific Railroad and developers to ensure that adequate and proper spur lines are connected as requested and appropriate, and the City should review and approve all heavy rail plans accordingly.

.550 AIR

The Portland Troutdale Airport, a general aviation facility, provides charter service as needed and required by the community. This charter service is completely private in its operation and is driven by private demands.

The Portland Troutdale Airport Master Plan, which is under preparation, will address air travel and airport planning needs. When the document is available, it will be included in the Public Facilities Plan and considered an integral part thereof.

The Troutdale Public Facilities Plan strongly encourages additional bus routes on 257th Avenue and service to the Columbia North Shores Industrial area utilizing Marine Drive and some couplet configuration with Airport Way, Sandy Blvd, etc.

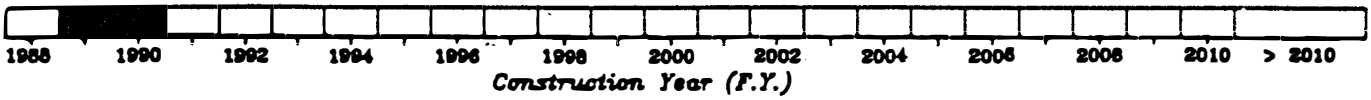
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #1

PROJECT: TROUTDALE GRADE SCHOOL ACCESS PROJECT

ESTM TOTAL PROJECT COST: $250,000



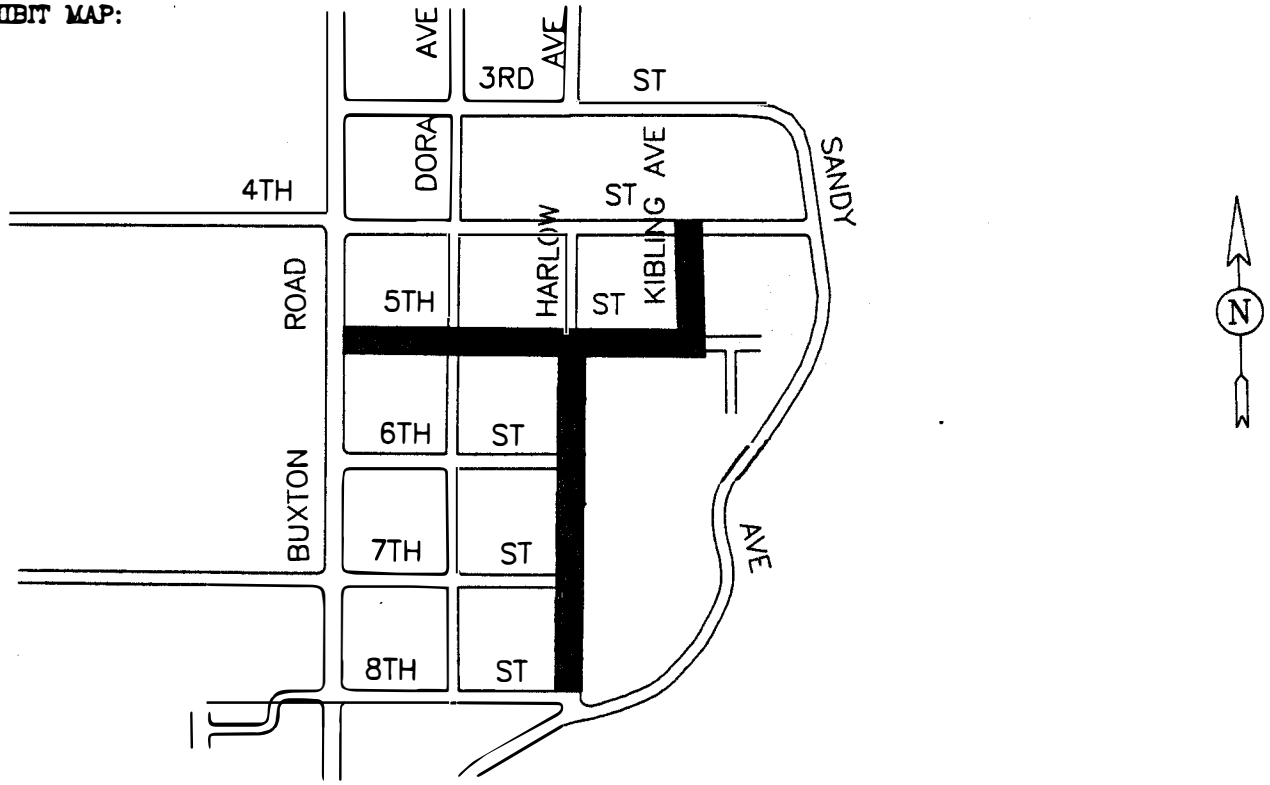
Project Description:
This project constructs 1750 feet of local streets together with curbs, sidewalks, parking and other elements incidental to the project.

Project Justification/Benefit:
The condition of these roads is substandard for their functional classification and no provisions have been provided to separate vehicular and pedestrian traffic. These roads serve both of those functions for the Troutdale Grade School. The construction of this project will enhance the safety and serviceability of these local roads.

Funding Notes:
This project is jointly funded by the Reynolds School District (45%), the City of Troutdale (20%), and a Community Development Block Grant (35%). The local improvement district process will be utilized to fund the school and City's contribution.

#3

EXHIBIT MAP:



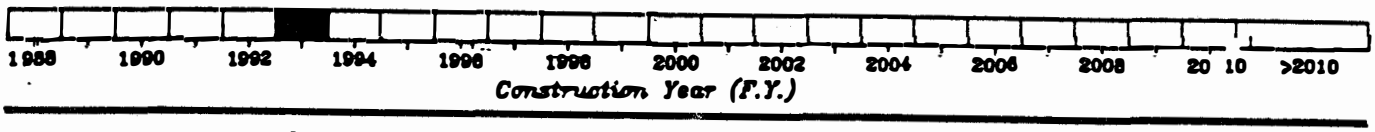
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #3

PROJECT: FOURTH AVENUE/257TH CONNECTOR

ESTM TOTAL PROJECT COST: $50,000



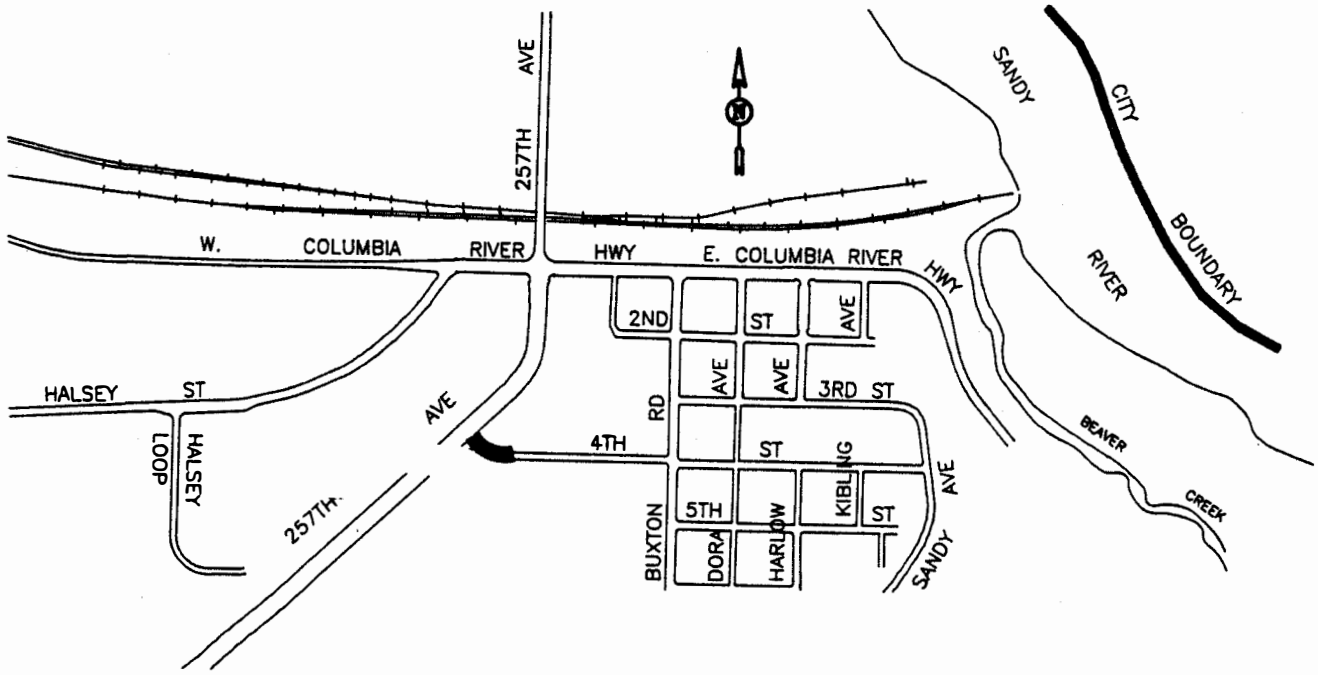
Project Description:
This project would construct approximately 150 feet of local roadway and connect with 257th Avenue. It would include curbs, gutters, sidewalks and other facilities incidental to the construction effort.

Project Justification/Benefit:
This connection to 257th Avenue would provide a 3rd access point between the Historic Columbia River Highway and Cherry Park Road. It would provide access for local circulation only, but would have access to and from 257th Avenue.

Funding Notes:
This project would be funded jointly by benefiting property owners and the City of Troutdale.

#5

EXHIBIT MAP:



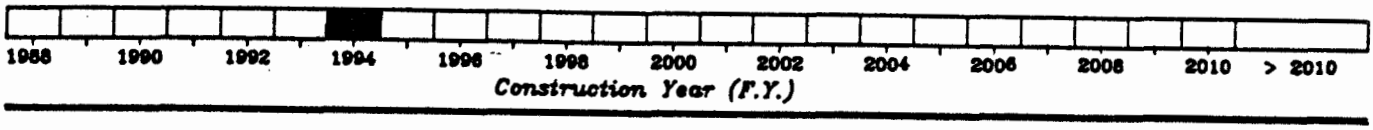
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #4

PROJECT: SIXTH & SEVEN AVENUE RECONSTRUCTION

ESTM TOTAL PROJECT COST: $80,000



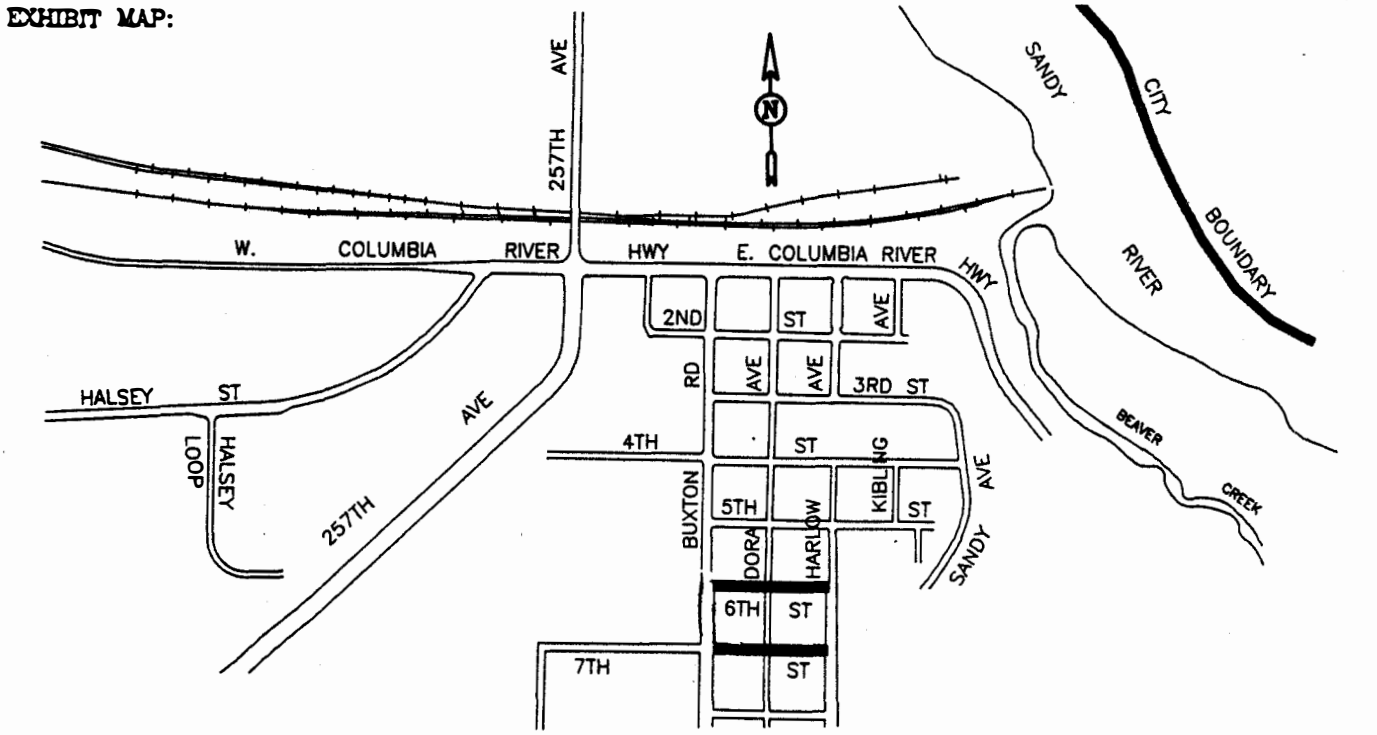
Project Description:
This project would reconstruct 1,000 feet of local roadway to current standards together with curbs, sidewalks, gutters and other appurtenances incidental.

Project Justification/Benefit:
These roadways are not constructed to City standards and need curbs, gutters, sidewalks, etc. A pavement overlay will be a part of this reconstruction project.

Funding Notes:
This project would be funded primarily by benefiting property owners through the local improvement district process. Grant sources may be available in addition to some City participation.

#6

EXHIBIT MAP:



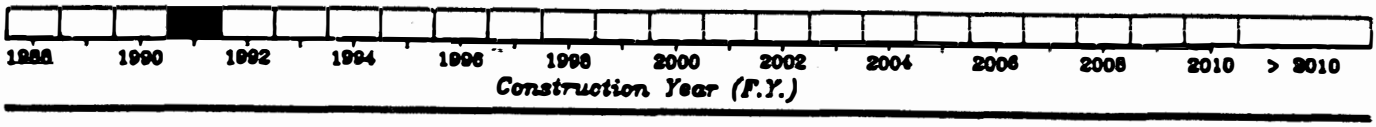
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #2

PROJECT: OLD TOWN ROAD RECONSTRUCTION

ESTM TOTAL PROJECT COST: $210,000



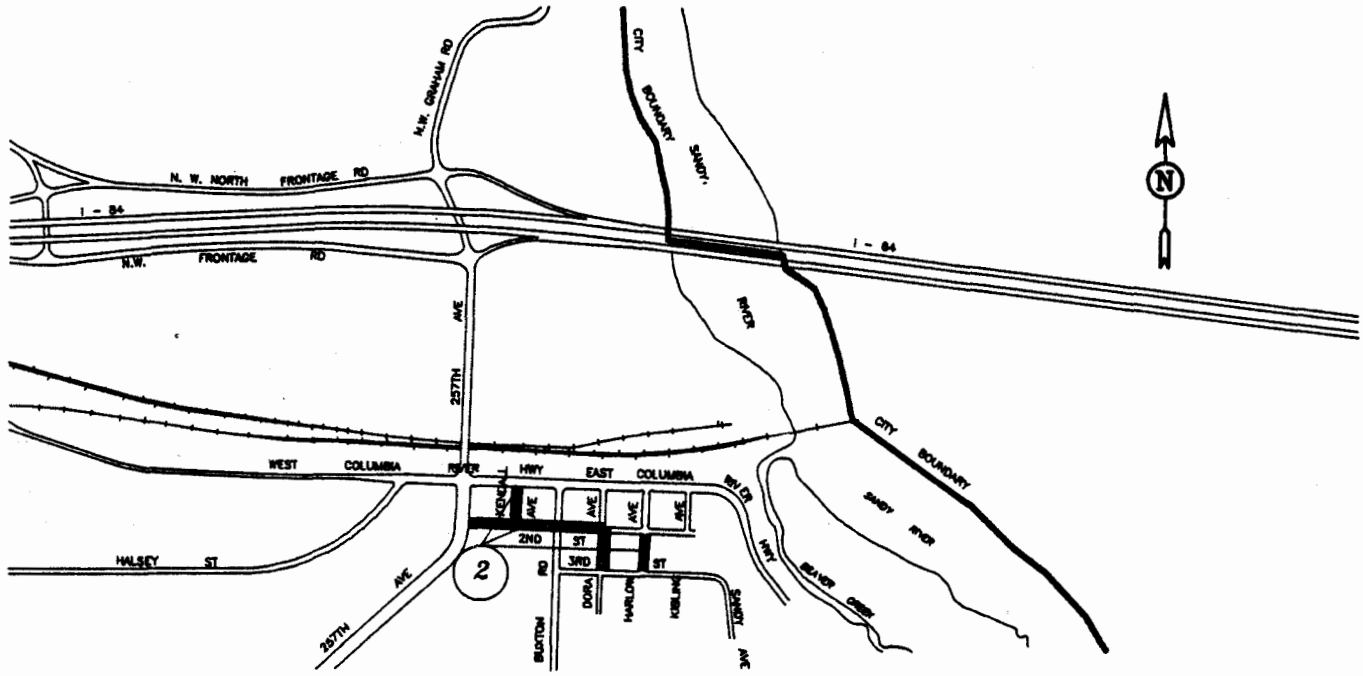
Project Description:
This project would reconstruct approximately 1500 feet of local roads within the the downtown core area, and complete the reconstruction efforts of an antiquated and deteriorating "Old Town" road system.

Project Justification/Benefit:
Roads designated for this project are the last of those to be reconstructed in the downtown core area. These roads are substandard for their classification and a maintenance burden on the community. They do not have adequate pedestrian facilities.

Funding Notes:
This project would be funded by benefiting property owners (50%), the City of Troutdale (30%), and possibly by grant sources (20%).

#4

EXHIBIT MAP:



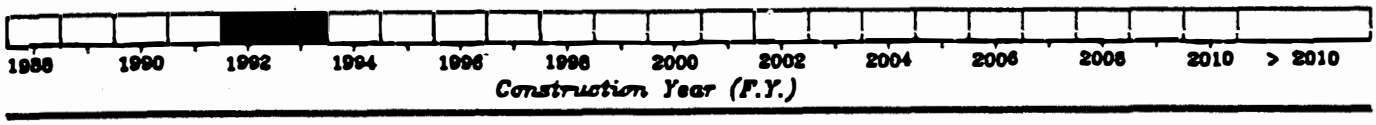
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #5

PROJECT: EIGHTH STREET (BUXTON/SANDY CONNECTOR) & HARLOW EXTENSION

ESTM TOTAL PROJECT COST: $180,000



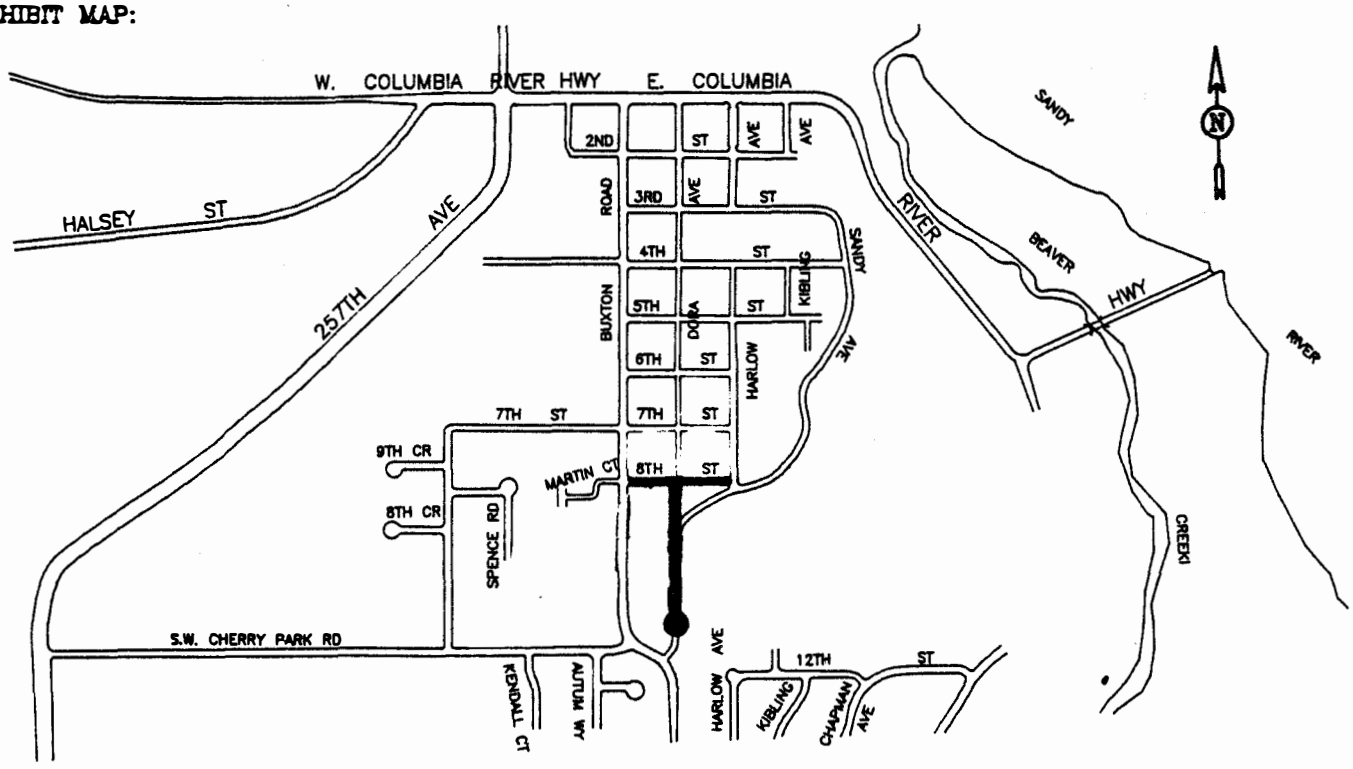
Project Description:
This project would construct/reconstruct approximately 500 feet of Eighth Street from Buxton to Sandy Avenue and construct/reconstruct approximately 650 feet of Dora including a terminal cul-de-sac.

Project Justification/Benefit:
This project would complete the Third Street, Sandy Avenue, Eighth Street ice route loop and abandon a dangerous intersection at Buxton, Cherry Park, and Sandy by providing a realignment of Dora and a cul-de-sac at the end of Dora.

Funding Notes:
This project would be funded jointly by benefiting property owners and the City of Troutdale.

#7

EXHIBIT MAP:



CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #6

PROJECT: CHERRY PARK / 257TH SIGNALIZATION

ESTM TOTAL PROJECT COST: $75,000

Construction Year (F.Y.)

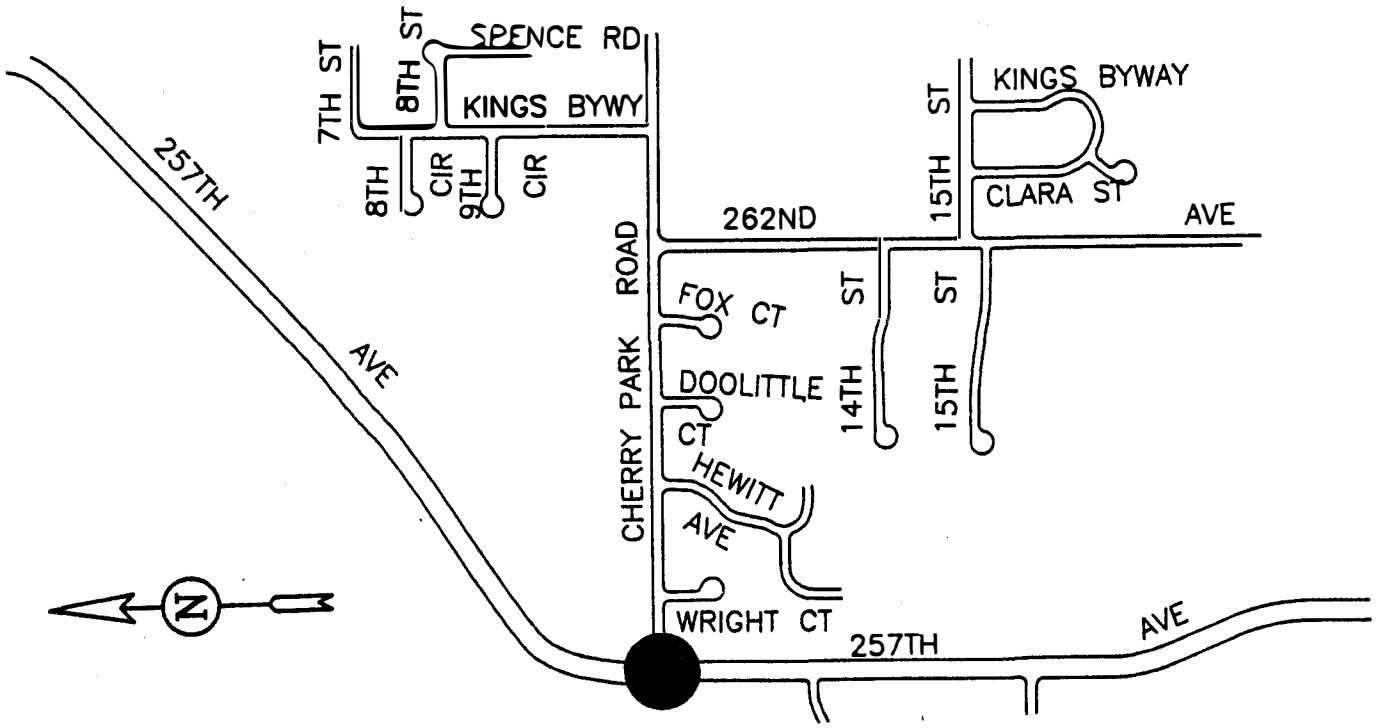
Project Description:
This project would construct a signal system necessary to accommodate a safe and functional intersection.

Project Justification/Benefit:
This signal would increase the level of safety at the Cherry Park and 257th Avenue intersection. This project was initially included in the 257th Avenue construction plans then dropped due to funding shortfalls. Since that time the new Troutdale Post Office has been located on Cherry Park, and the Reynolds High School was substantially expanded. As additional development takes place and/or as Cherry Park is extended to the west of that intersection, a signal will be required commensurate with the geometry and need of the intersecting roadways.

Funding Notes:
This project would be funded by Multnomah County from its usual and customary resources.

#65

EXHIBIT MAP:



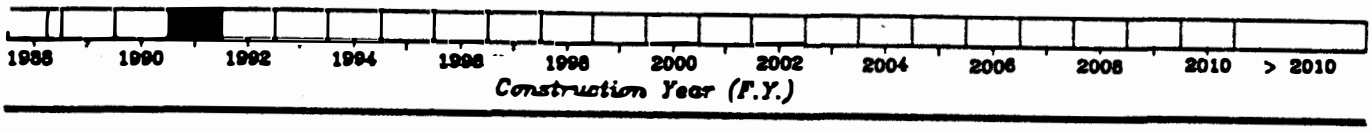
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #7

PROJECT: HISTORIC COLUMBIA RIVER HIGHWAY RECONSTRUCTION/IMPROVEMENT

ESTM TOTAL PROJECT COST: $650,000



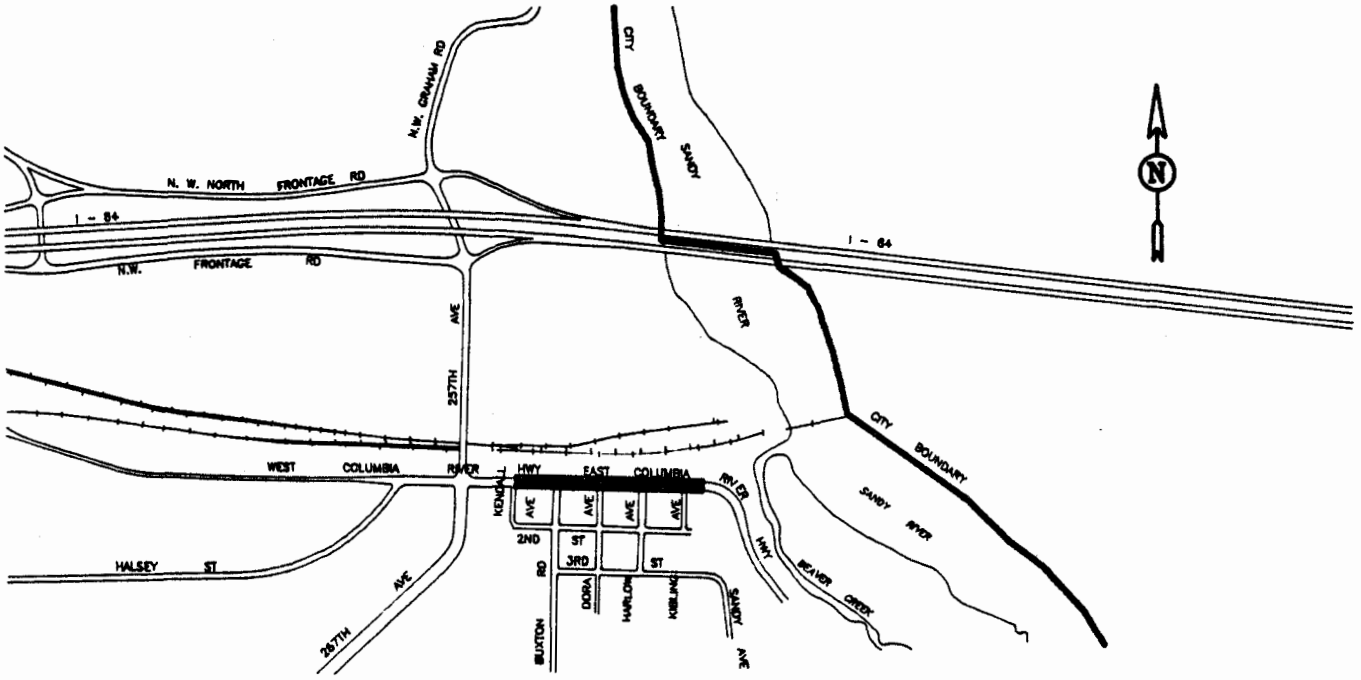
Project Description:
This project would reconstruct approximately 1,000 feet of the existing Historic Columbia River Highway. It would install sidewalks, curbs, gutters, underground power, ornamental street lighting and other elements incidental to the construction effort.

Project Justification/Benefit:
This project would be constructed in close compliance to the City of Troutdale's Downtown Concept and Implementation Plan. The project would enhance the visual image of the downtown core area and provide functional road improvements as well. It would define parking, bicycle routes and pedestrian circulation patterns.

Funding Notes:
This project would be funded jointly by the City of Troutdale, the Oregon Department of Transportation and by benefiting property owners through the local improvement district process.

#8

EXHIBIT MAP:



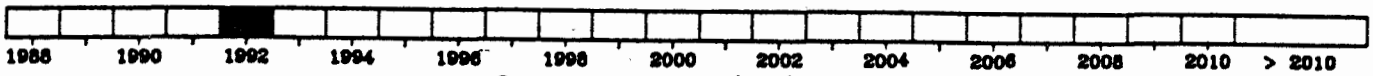
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #8

PROJECT: 257th AVENUE IMPROVEMENTS

ESTM TOTAL PROJECT COST: $2,860,000



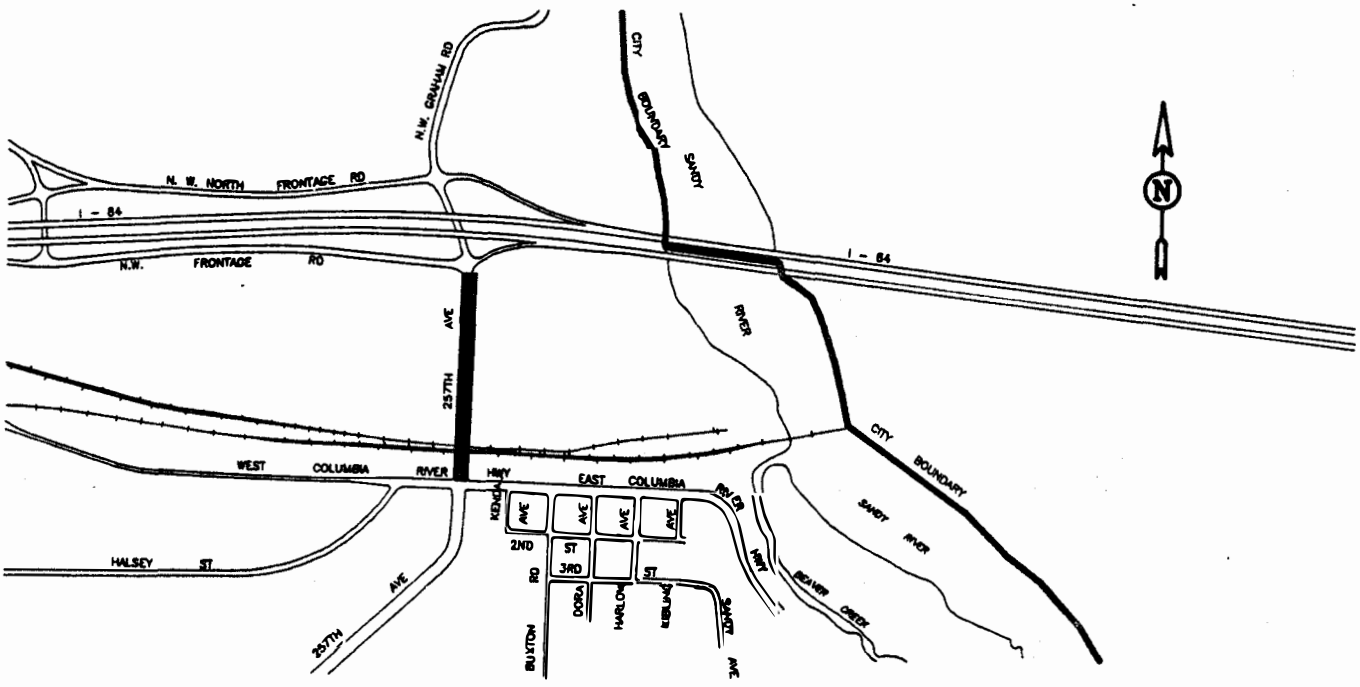
Project Description:
This project would widen the 257th Avenue railroad overpass structure and improve 257th Avenue from the Historic Columbia River Highway to I-84. The project would be a 5 lane cross-section with sidewalks on both sides of the street.

Project Justification/Benefit:
257th Avenue was recently constructed to a five lane cross-section south of the Historical Columbia River Highway. The logical extension (completion) of this project would see this facility improve to the interstate freeway I-84. In addition, the development pressures require improvement of this facility in a timely and expeditious fashion. The project has been identified in the State's Six Year Improvement Program and has been prioritized by the East Multnomah County Transportation Committee.

Funding Notes:
This project would be funded from Federal Aid Urban (FAU) and/or (I-4R) Interstate restoration, rehabilitation, resurfacing, and reconstruction monies, State and Multnomah County gas tax and other funding sources as may be available and required.

#62

EXHIBIT MAP:



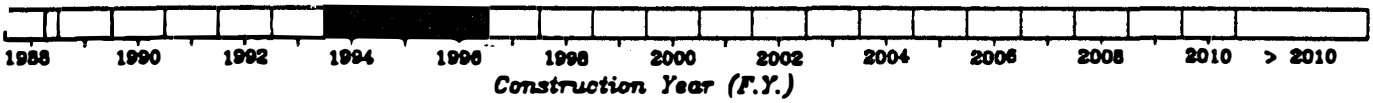
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER#9

PROJECT: COLLECTOR AND NEIGHBORHOOD CORRIDOR PROJECT(S)

ESTM TOTAL PROJECT COST: $400,000



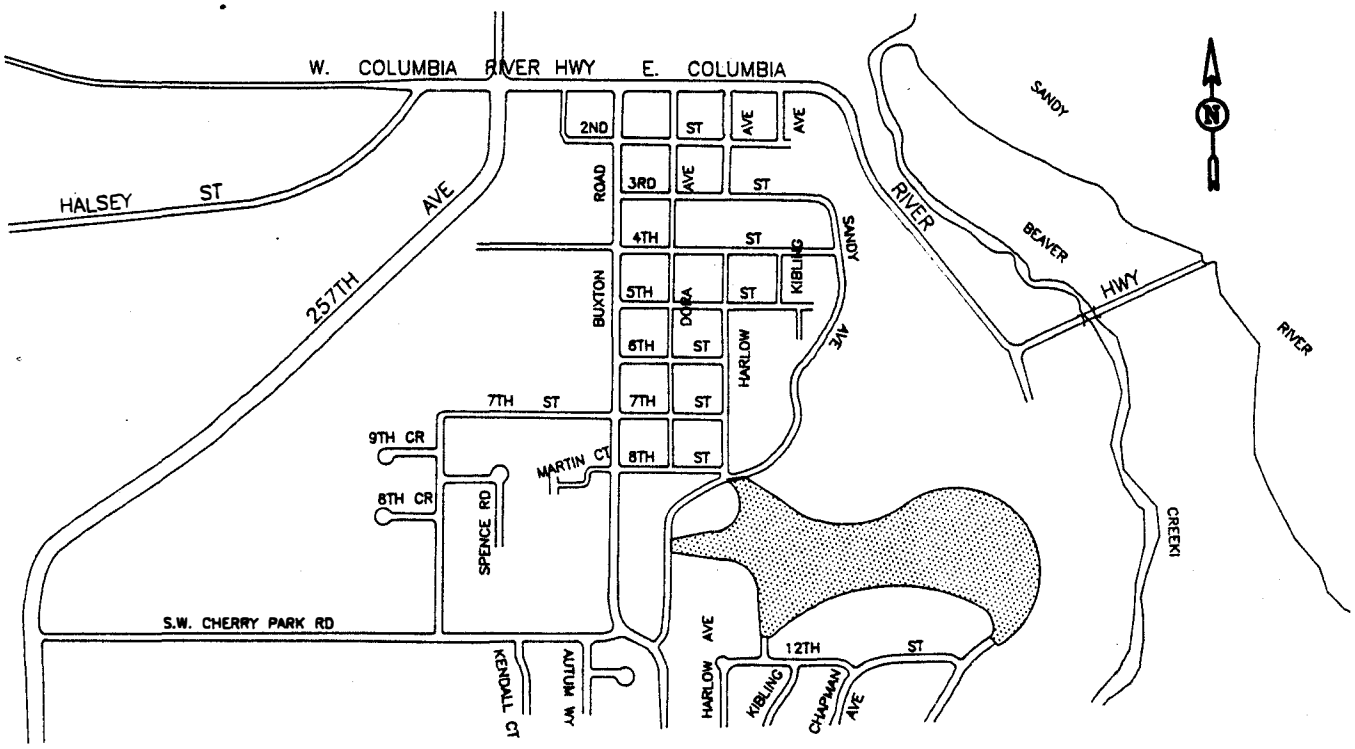
Project Description:
This project would construct the necessary neighborhood collectors, local streets and cul-de-sacs to required standards to serve future development.

Project Justification/Benefit:
This project will be required to accommodate future residential development north of the Weedin addition and east of Sandy Avenue.

Funding Notes:
This project will be funded entirely by the benefiting property owner.

#71

EXHIBIT MAP:



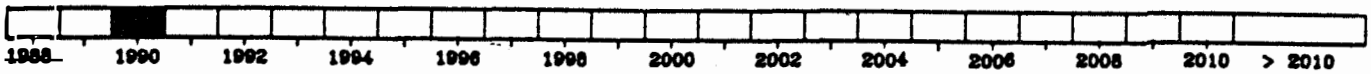
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #10

PROJECT: SANDEE PALISADES IV / SUBDIVISION ROAD SYSTEM

ESTM TOTAL PROJECT COST: $400,000



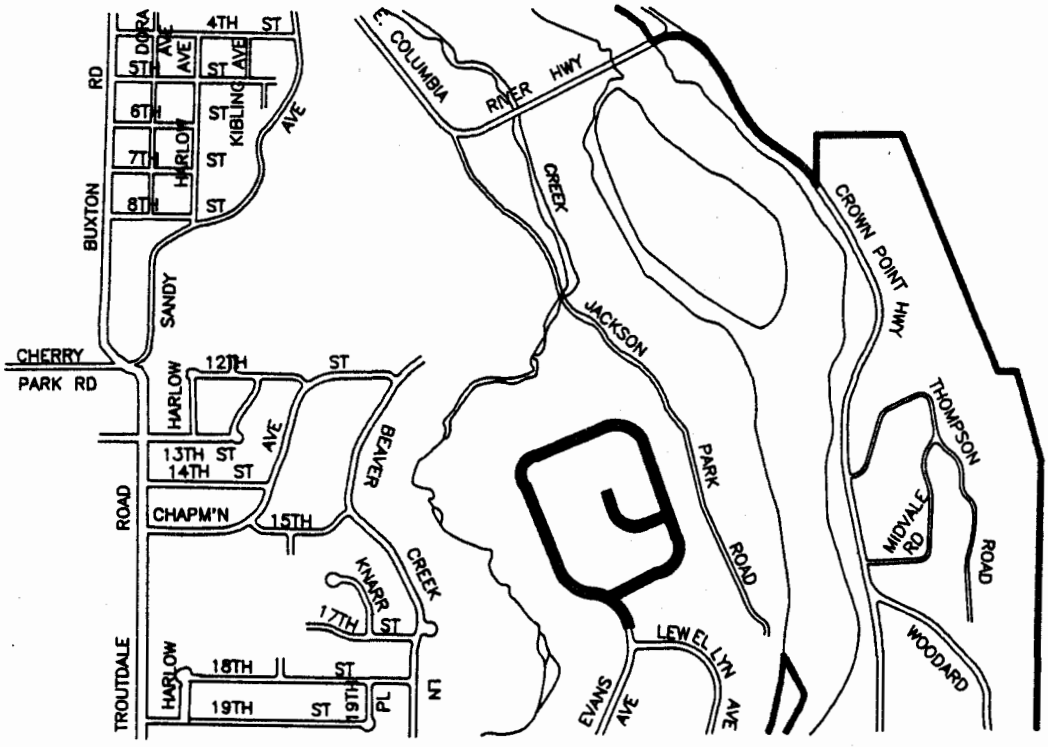
Project Description:
This project will construct 3,200 feet of neighborhood collector, local and cul-de-sac roads to provide service to the Sandee Palisades Phase IV Addition.

Project Justification/Benefit:
This project is required to provide road related services to the subdivision.

Funding Notes:
This project will be funded entirely by the benefiting property owner and may be funded through the local improvement district process.

#72

EXHIBIT MAP:



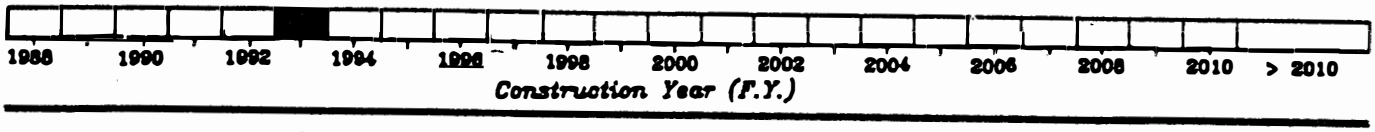
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER #11

PROJECT: JACKSON PARK ROAD IMPROVEMENTS

ESTM TOTAL PROJECT COST: $80,000



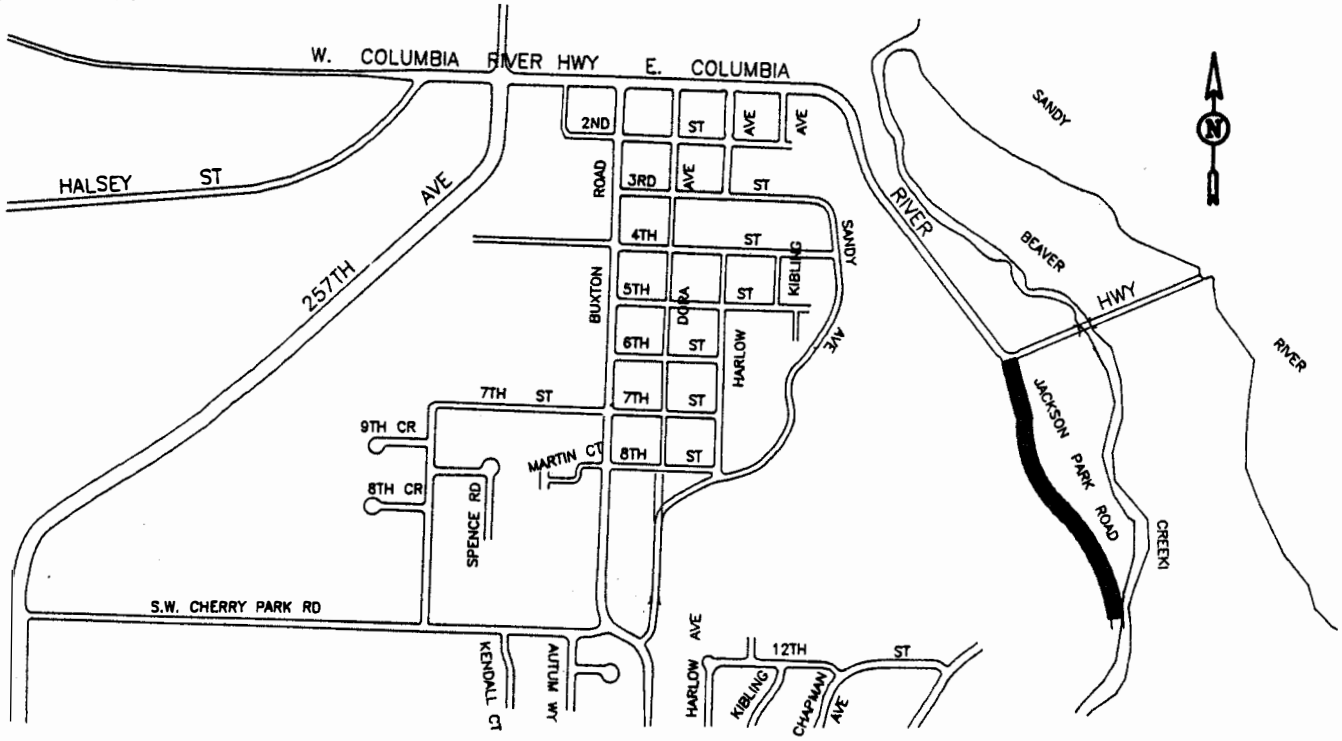
Project Description:
This project would reconstruct approximately 900 feet of Jackson Park roadway from the Historic Columbia River Highway on the north to the Beaver Creek Bridge on the south.

Project Justification/Benefit:
This is a reconstruction project and will rebuild an old and deteriorating section of roadway. This local access road also serves as a service road for the City's Beaver Creek sanitary sewer interceptor and as an access point to the Beaver Creek Canyon.

Funding Notes:
This project would be primarily funded from the Road Improvement Fund with revenues from both gas tax and system development charges. Additional contribution may be derived from the Water and Sewer Improvement Fund and General Funds as commensurate with the specific service road benefits.

#2

EXHIBIT MAP:



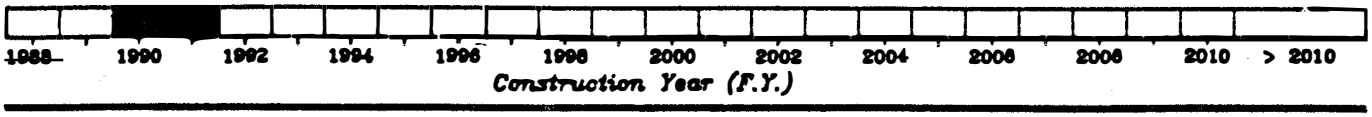
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #12

PROJECT: FRONTAGE ROAD & INDUSTRIAL AREA ACCESS

ESTM TOTAL PROJECT COST: $80,000



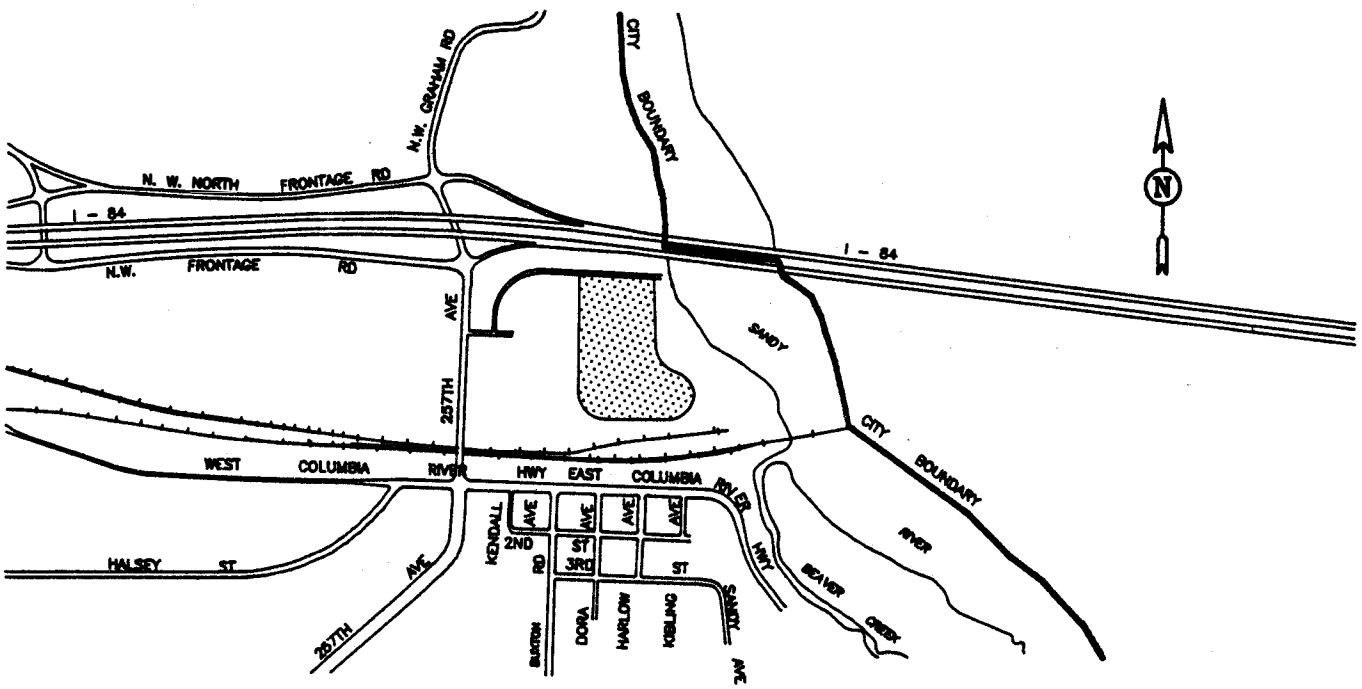
Project Description:
This project would construct roads, curbs, gutters, drainage facilities and other appurtenances necessary to provide access to the City's wastewater treatment plant and other industrially zoned properties and facilities in the area north of the Union Pacific Railroad tracks, south of I-84, and west of the Sandy River as applicable.

Project Justification/Benefit:
This project will provide a defined and safe ingress and egress to both existing facilities and property available for future industrial development. It will also provide for the safe access of emergency vehicles, delivery trucks, etc.

Funding Notes:
This project would be funded primarily by the benefiting property owners.

#17

EXHIBIT MAP:



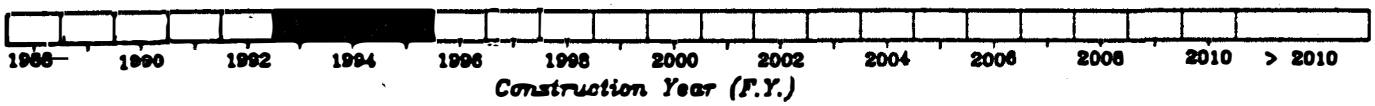
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #13

PROJECT: HENSLEY ROAD EXTENSION

ESTM TOTAL PROJECT COST: $250,000



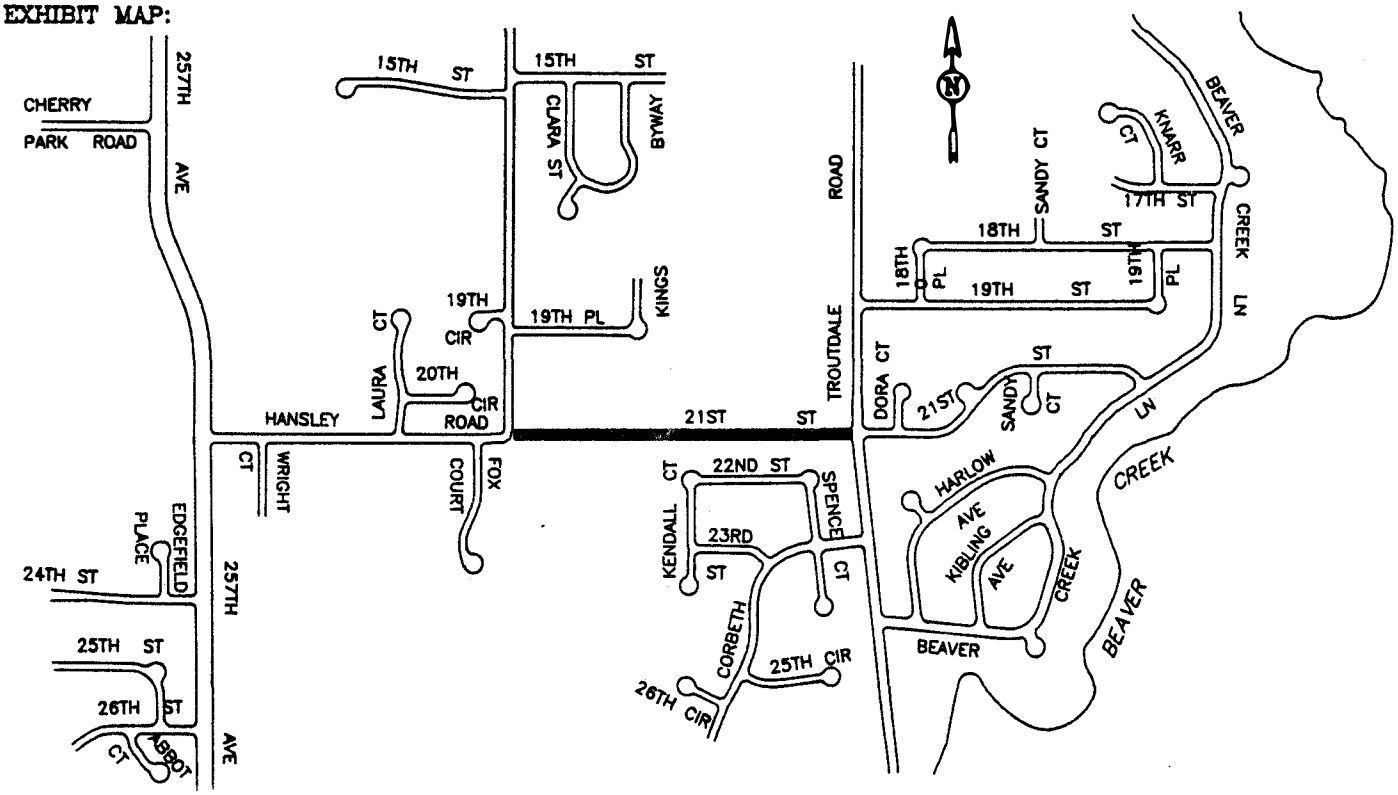
Project Description:
This project would construct approximately 1,500 feet of neighborhood collector classification roadway complete with curbs, gutters, sidewalks, storm drain facilities and other incidental appurtenances. This project would begin at 262nd Avenue on the west and connect to Troutdale Road on the east.

Project Justification/Benefit:
This project would provide a needed east/west connection between 257th Avenue and Troutdale Road. It falls midway between Cherry Park and Stark Street and would be a logical and functional addition to the road system. It would also provide the ingress and egress necessary for the construction of the City's Sunrise Park and provide a connecting point for future residential development as well.

Funding Notes:
Financed from the Road Improvement Fund, General Fund and benefiting property owners.

#10

EXHIBIT MAP:



CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #14

PROJECT: 257TH/S.W. HENSLEY ROAD SIGNALIZATION

ESTM TOTAL PROJECT COST: $75,000

1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 > 2010

Construction Year (F.Y.)

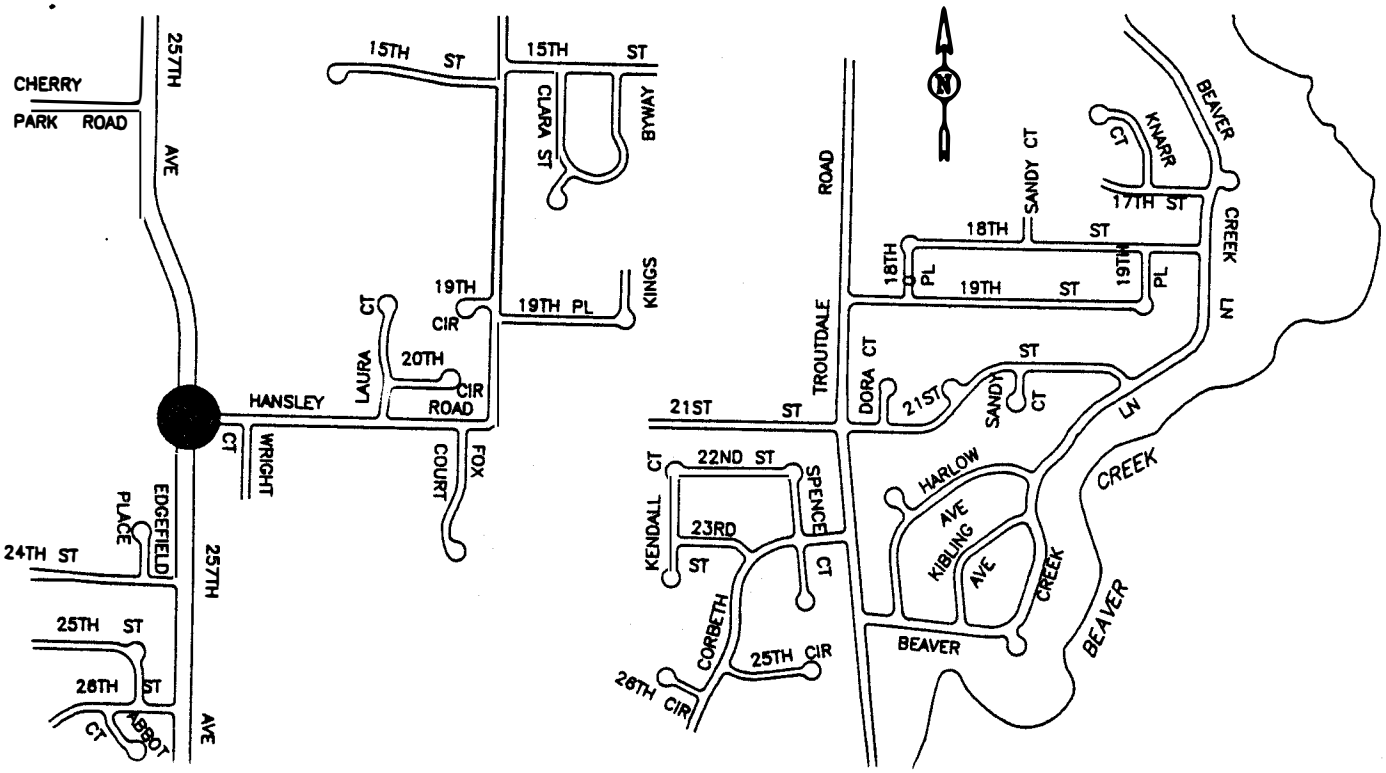
Project Description:
This project would construct a traffic signal commensurate with the needs for that roadway intersection.

Project Justification/Benefit:
As development continues for both single and multi-family residential units, accessing Hensley, additional safety and traffic control will be required at the 257th/S.W. Hensley intersection. This signalization will probably not be required until the Hensley extension to Troutdale Road is constructed.

Funding Notes:
This project will be funded by Multnomah County from its usual and customary resources.

#66

EXHIBIT MAP:



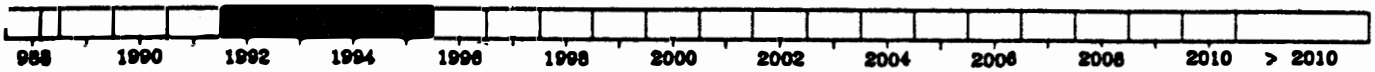
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #15

PROJECT: STARK STREET CONNECTORS

ESTM TOTAL PROJECT COST: $250,000



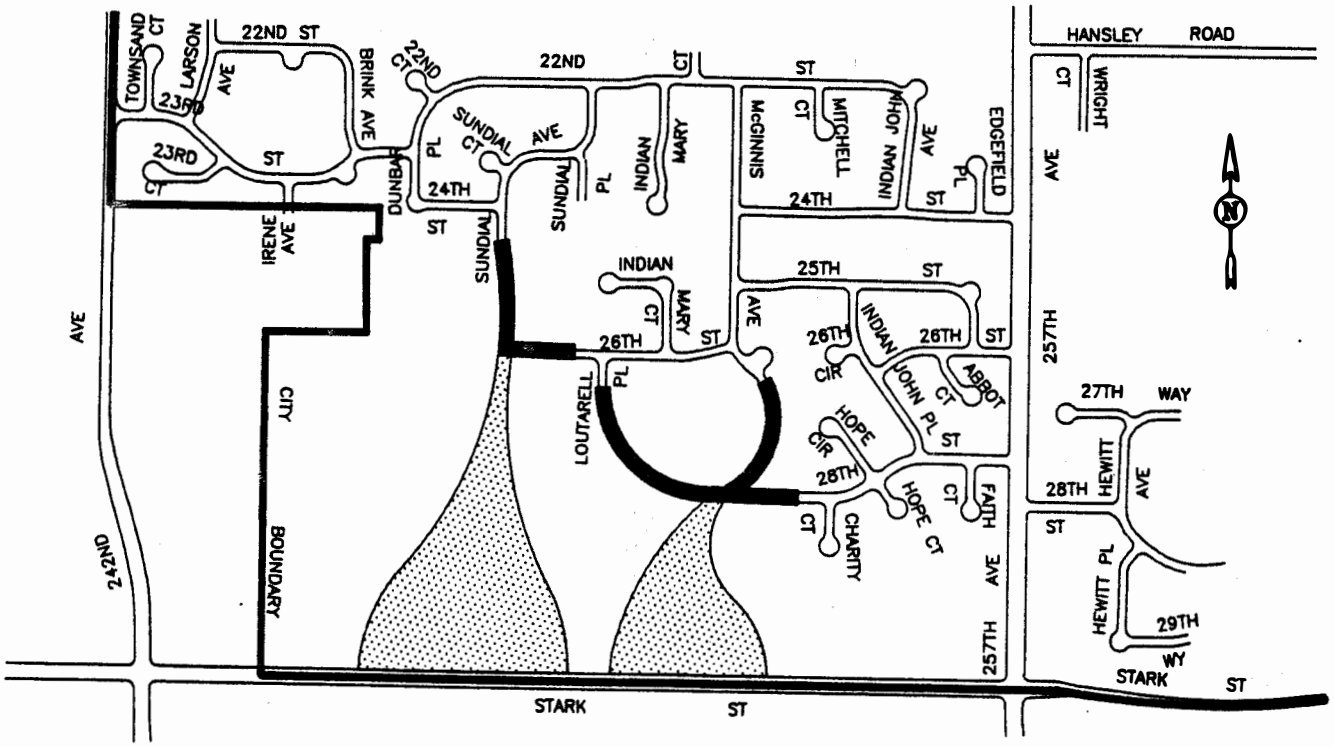
Project Description:
This project will construct neighborhood collectors and/or other local streets necessary to accommodate development (both residential and commercial) north of Stark Street and south of existing developed subdivisions. This project would include road, curbs, gutters, sidewalks, storm drainage facilities and other items incidental to the project.

Project Justification/Benefit:
The development of property in this project corridor requires road related improvements.

Funding Notes:
This project would be funded primarily from the benefiting property owners with the potential of some City participation for oversizing requirements.

#16

EXHIBIT MAP:



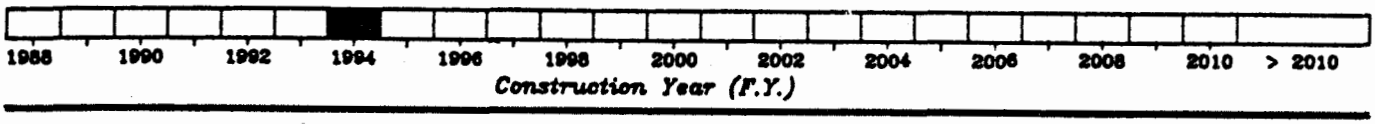
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #16

PROJECT: STARK STREET WIDENING

ESTM TOTAL PROJECT COST: $750,000



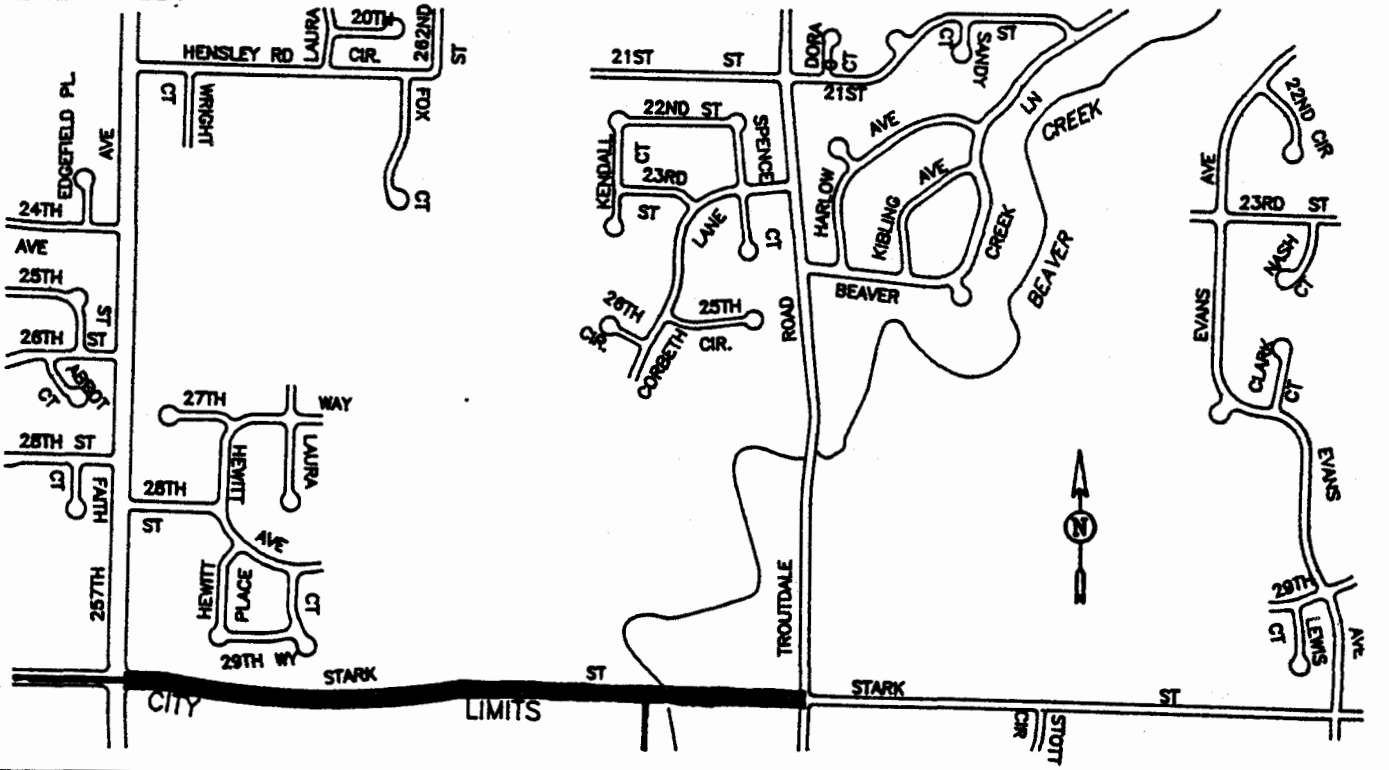
Project Description:
The current five lane configuration of Stark Street ends on the east side at 257th Avenue. This project would continue this major arterial cross-section to Troutdale Road and terminate at a signalized intersection there.

Project Justification/Benefit:
As residential subdivisions and multi-family living units and commercial areas develop that require access to Stark Street or are affected by the Troutdale Road/Stark Street intersection, improvements to Stark Street must be made to accommodate these pressures. The existing two lane structure has both substandard capacity and design geometry.

Funding Notes:
This project would be funded primarily from Multnomah County designated funding sources and/or benefiting property owners adjoining the street.

#63

EXHIBIT MAP:



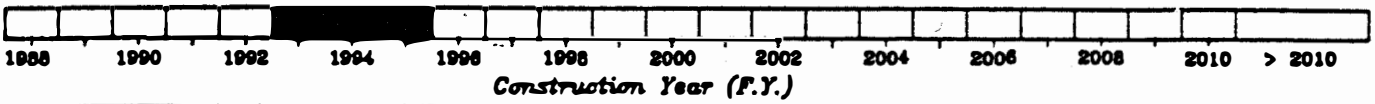
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #17

PROJECT: INTERNAL CIRCULATION LOOP / STARK STREET CONNECTOR

ESTM TOTAL PROJECT COST: $350,000



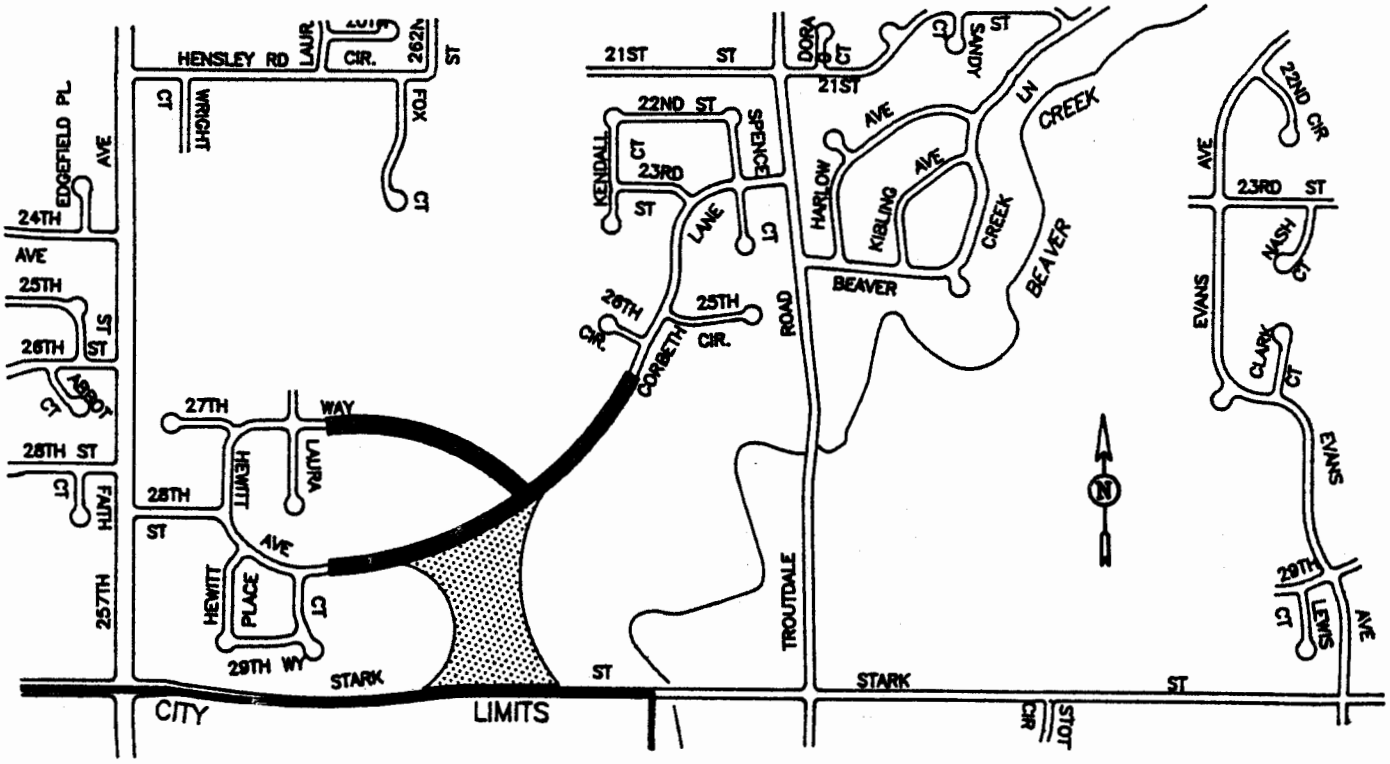
Project Description:
This project will construct internal circulation road systems and connect to existing road facilities in Corbeth II subdivision and Stark Street.

Project Justification/Benefit:
This project will be required to provide local roads to developing properties as well as neighbor collector connections to Corbeth II, Stark Street and 257th.

Funding Notes:
This project would be funded by benefiting property owners.

#52

EXHIBIT MAP:



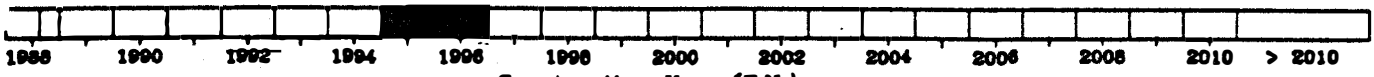
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #18

PROJECT: BEAVER CREEK COLLECTOR & LOCAL ROAD CORRIDOR NETWORK

ESTM TOTAL PROJECT COST: $500,000



Construction Year (F.Y.)

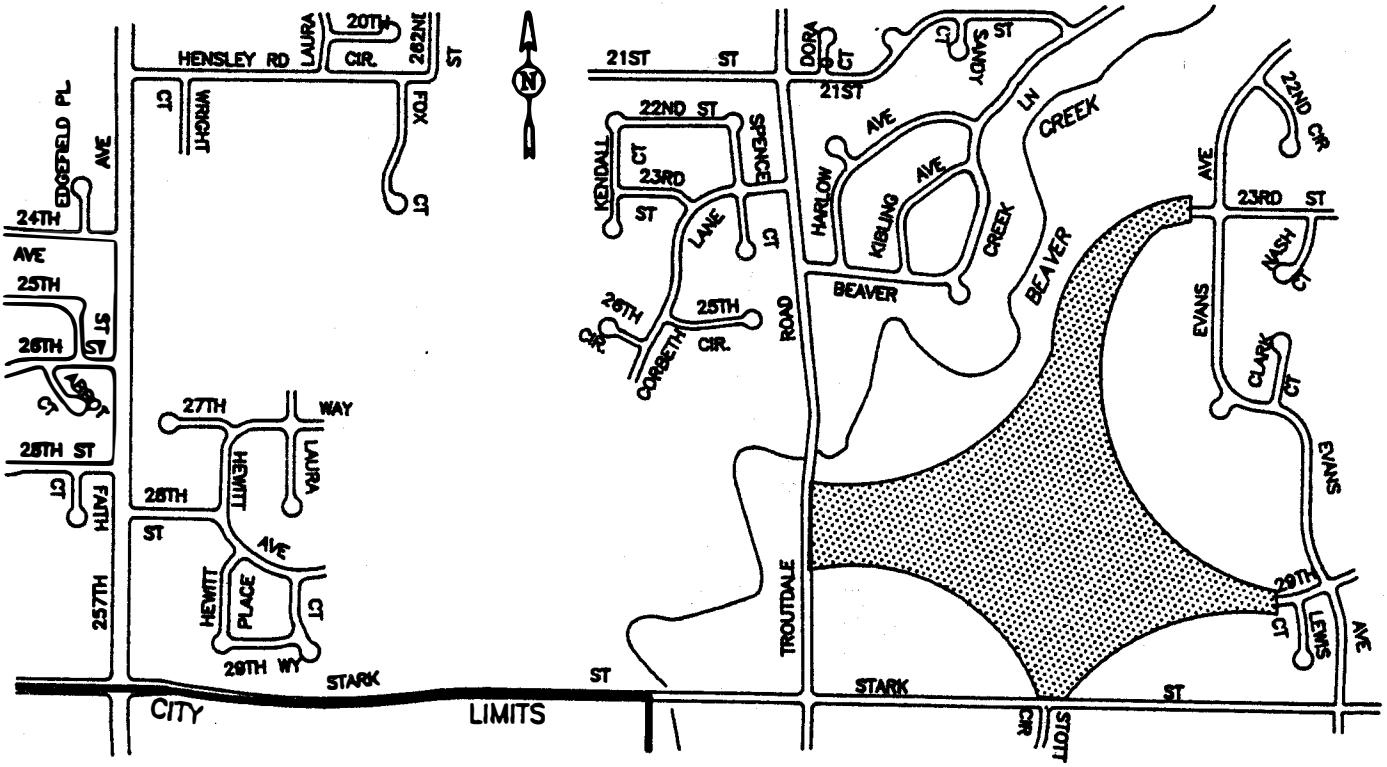
Project Description:
This project would construct a series of neighborhood collectors, local and cul-de-sac streets as necessary to accommodate development between Sandy Palisades and Beaver Creek on the west, and Stark Street on the south. A neighborhood collector connection to both Troutdale Road and Stark Street will be required and the local street network would be driven by development design.

Project Justification/Benefit:
The benefit of this road network would provide for additional access to Sandy Palisades as well as to single and multi-family units and limited commercial development.

Funding Notes:
This project would be funded entirely by benefiting property owners.

#11

EXHIBIT MAP:



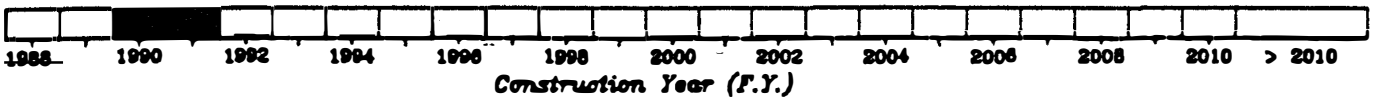
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #19

PROJECT: 33RD STREEET CONNECTOR

ESTM TOTAL PROJECT COST: $120,000



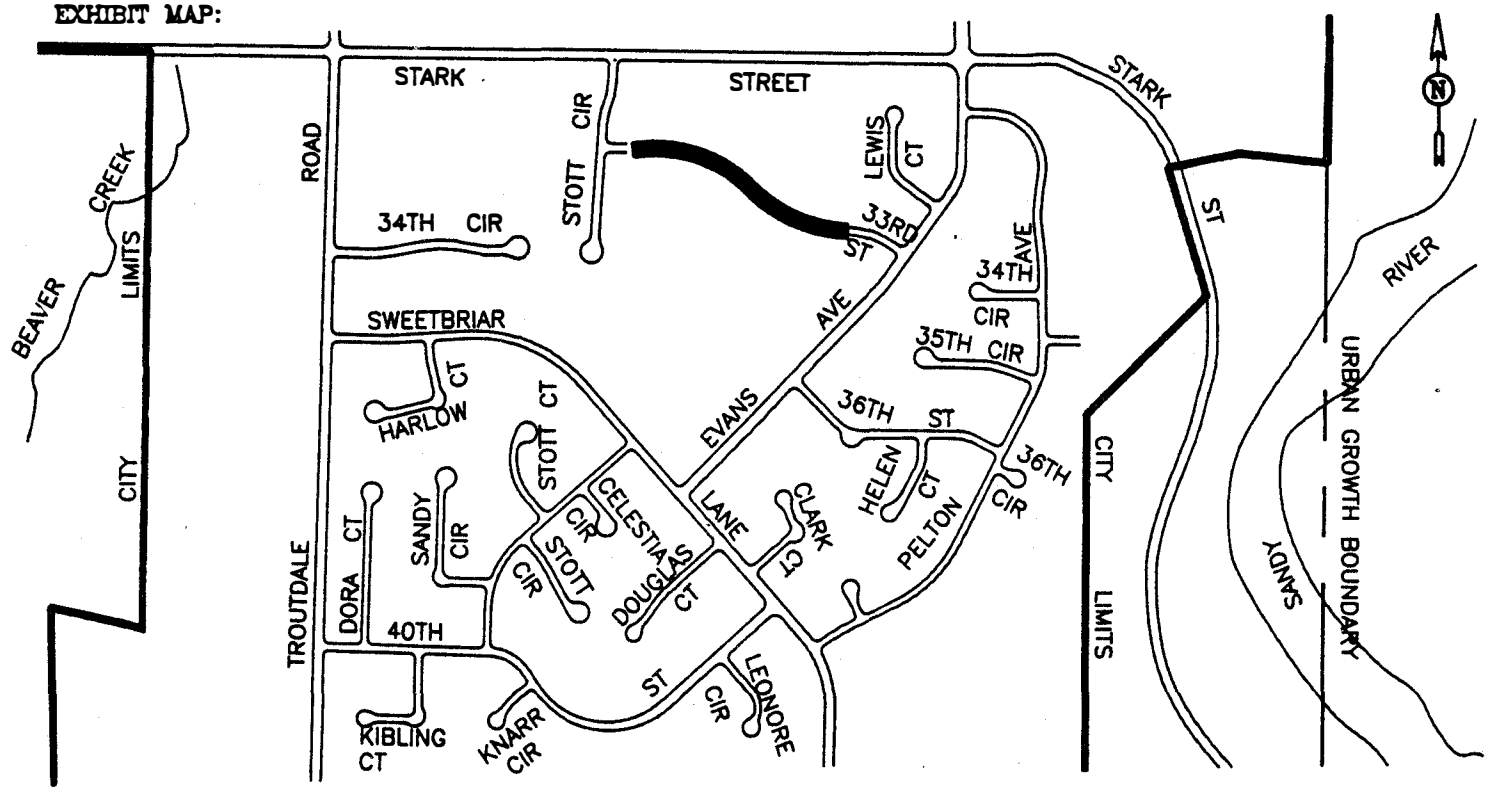
Project Description:
This project would construct 1,500 feet of local roadway connecting S.E. 33rd Street at Stott Circle and S.E. 33rd Street at Evans Avenue. This project would construct the road, curbs, gutters, sidewalks, storm drainage facilities and other appurtenances as necessary.

Project Justification/Benefit:
This project has long been contemplated and has been provided for by the construction of stub streets in both Sweetbriar and Valerie Terrace subdivisions. This roadway would enhance local circulation and provide access to future residential development.

Funding Notes:
This project would be funded entirely by benefiting property owners.

#12

EXHIBIT MAP:



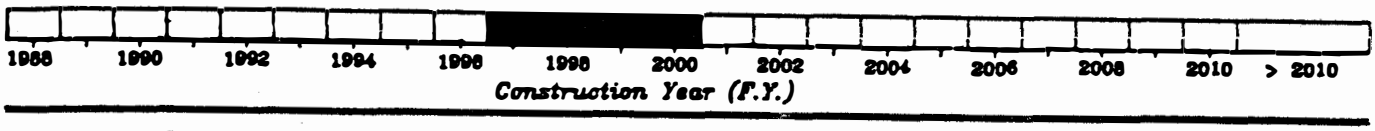
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #20

PROJECT: TROUTDALE ROAD WIDENING & FUNCTIONAL CLASSIFICATION CHANGE

ESTM TOTAL PROJECT COST: $350,000



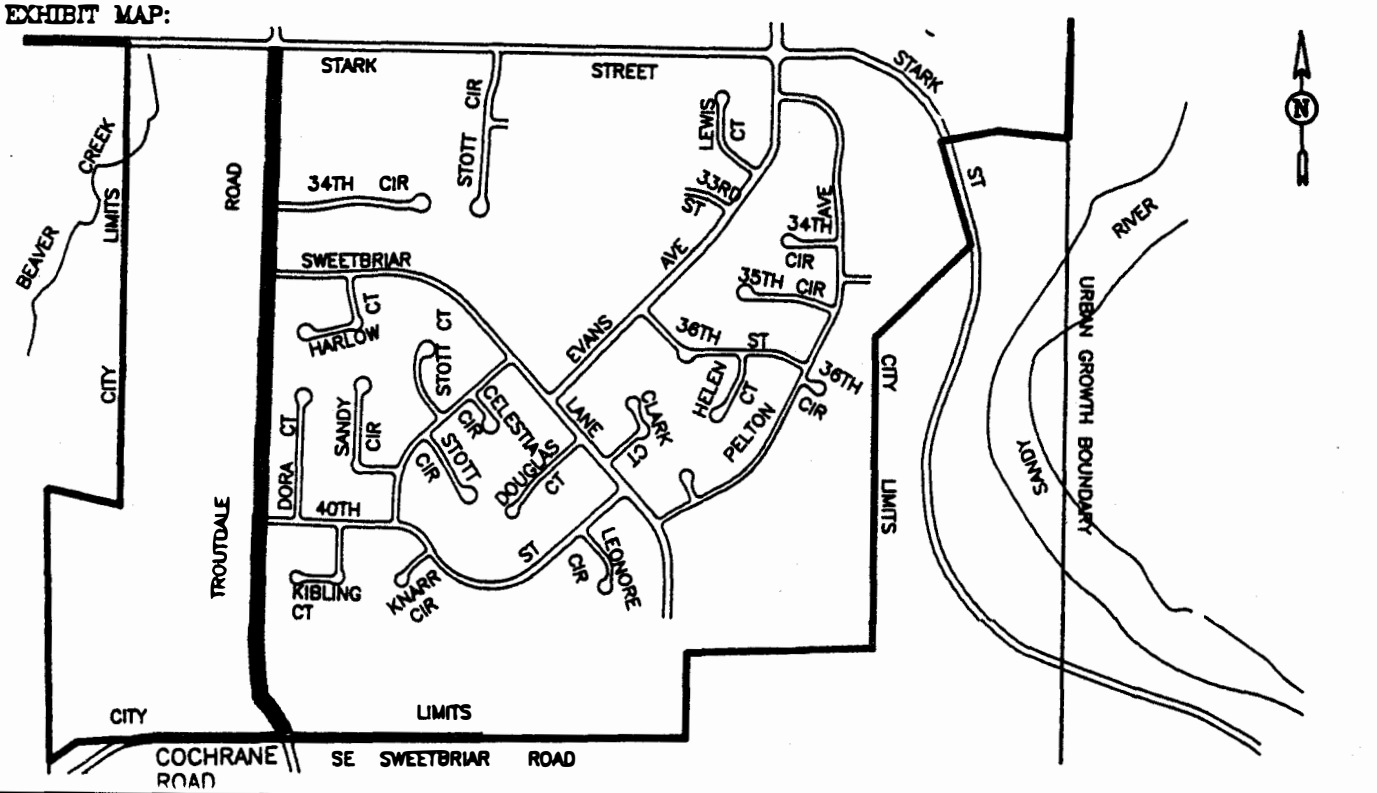
Project Description:
This project would widen Troutdale Road, construct bike lanes, sidewalks and other appurtenances necessary to bring the road up to standard. A 3-lane cross section from Stark to Cochron (Sweetbriar Road) should be considered.

Project Justification/Benefit:
Troutdale Road serves as an integral portion of the East Multnomah County Transportation Regional Network. Automobile and truck traffic to/from Boring and other communities south of Troutdale regularly utilize this roadway. In addition, as residential development continues in the south section of Troutdale and as future industrial park development takes place along Troutdale Road, the upgrade of the facility will be required.

Funding Notes:
The project would primarily be funded from Multnomah County and/or adjoining and benefiting property owners.

#70

EXHIBIT MAP:



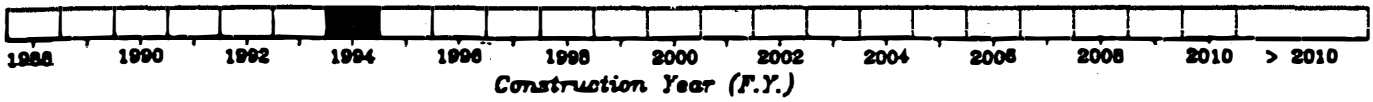
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #21

PROJECT: SWEETBRIAR ROAD RECONSTRUCTION

ESTM TOTAL PROJECT COST: $250,000



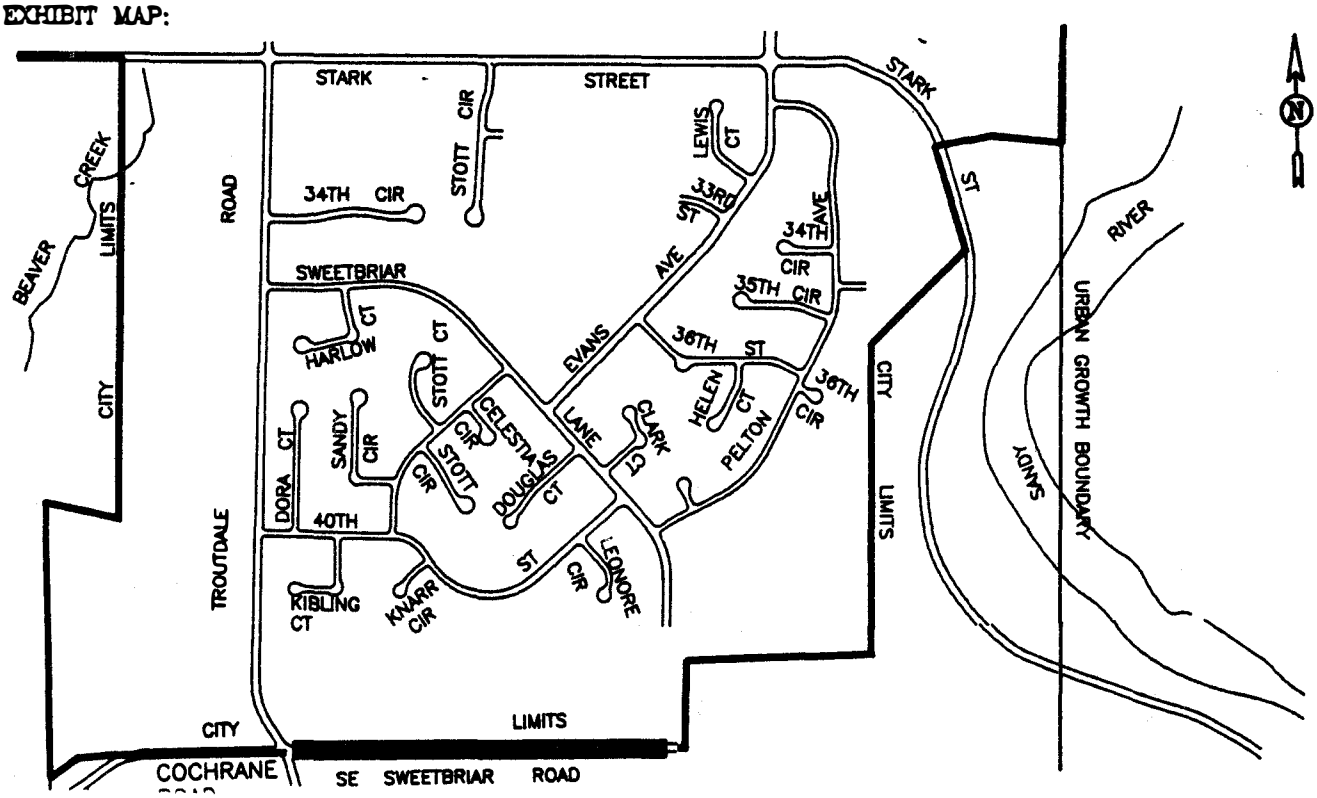
Project Description:
This project would reconstruct Sweetbriar Lane from Troutdale Road on the west to Evans on the east. The project would include roadway, curbs, gutters, sidewalks and other appurtenances necessary to bring this road up to urban neighborhood collector standards.

Project Justification/Benefit:
This project would allow for residential development and provide a higher level of access and circulation for existing development.

Funding Notes:
Funding of this project would be primarily by benefiting property and/or Multnomah County.

#2/13

EXHIBIT MAP:



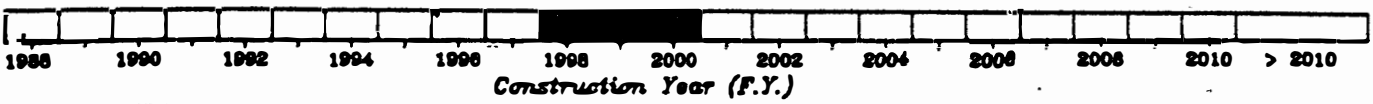
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #22

PROJECT: STREBIN ROAD / SWEETBRIAR ROAD EXTENSION

ESTM TOTAL PROJECT COST: $650,000



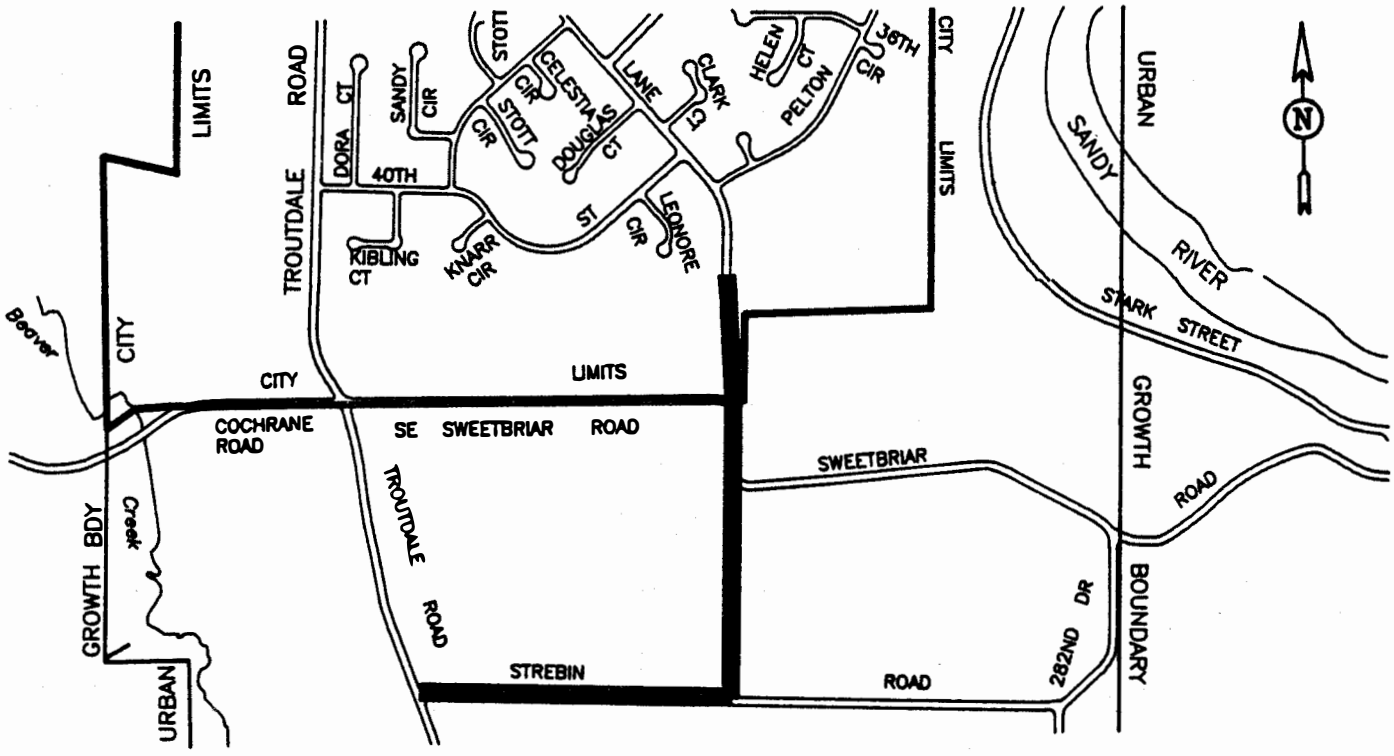
Project Description:
This project would construct 2,800 feet of neighborhood collector roadway. Most of this project is outside of the current City limits but within the City's urban growth planning area boundaries.

Project Justification/Benefit:
This project would allow a higher level of circulation and the necessary road infrastructure to accommodate future residential development.

Funding Notes:
This project would be funded primarily by benefiting private property owners and/or Multnomah County.

#14

EXHIBIT MAP:



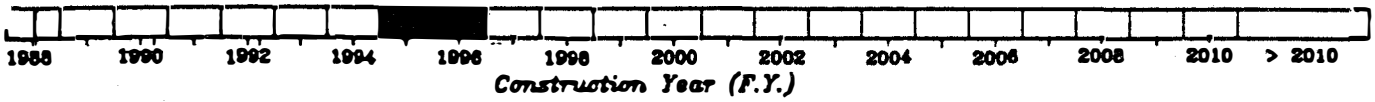
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #23

PROJECT: MOUNT HOOD PARKWAY

ESTM TOTAL PROJECT COST: $9,400,000



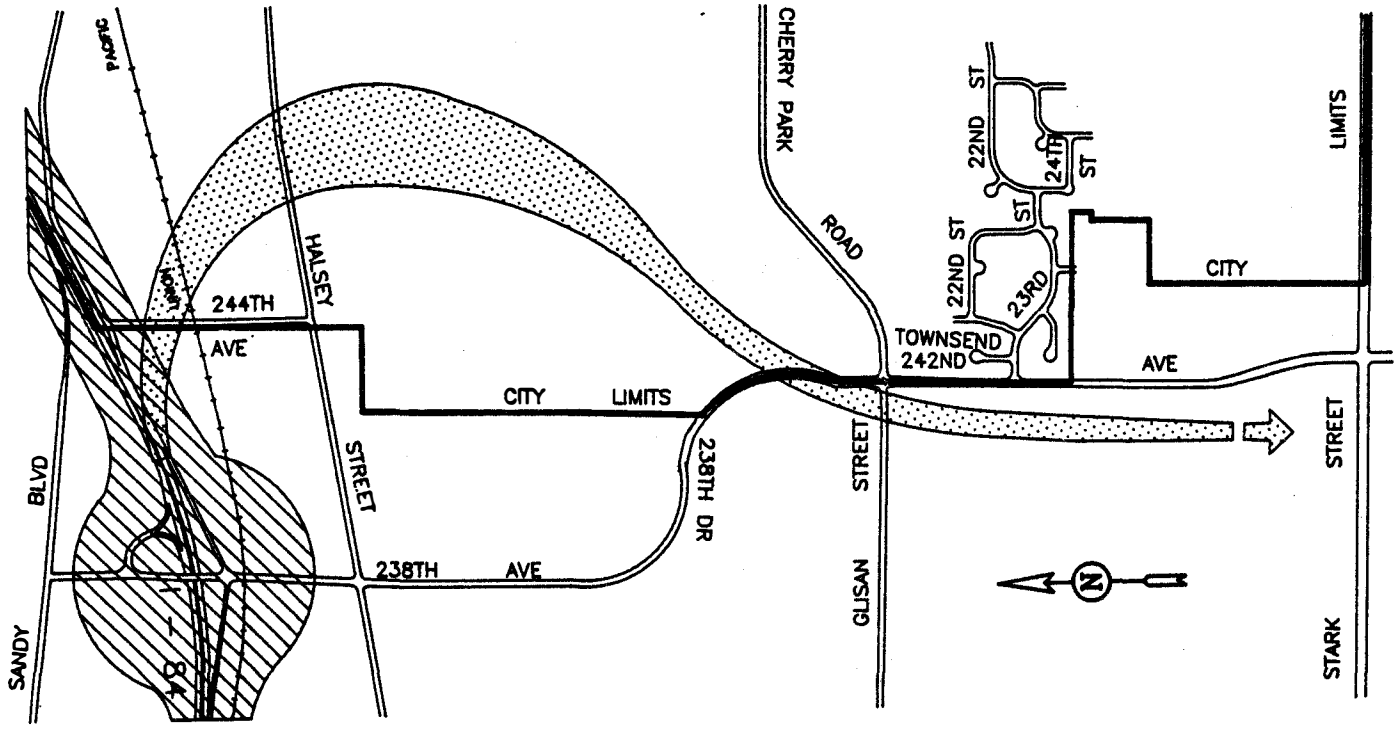
Project Description:
This project will construct approximately one mile of parkway classification roadway within the City of Troutdale as an element to the overall East County Parkway project. This project would include roadway, curbs, gutters, bicycle paths, drainage facilities, pedestrian facilities and other appurtenances as may be necessary and incidental to the project.

Project Justification/Benefit:
This project would benefit the entire State highway system as well as the regional and sub-regional networks. It would provide access from I-84 to U.S. Highway 26, Mt. Hood tourist/resort areas as well as Eastern Oregon points.

Funding Notes:
This project would be funded primarily from State funds and/or other Oregon Department of Transportation monies as may be appropriate.

#18

EXHIBIT MAP:



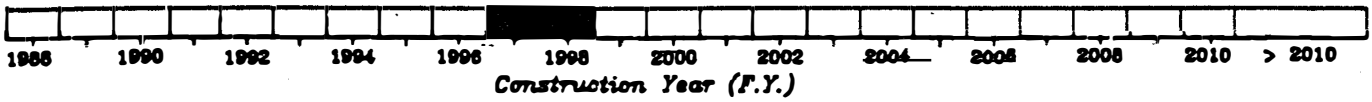
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #24

PROJECT: I-84 WIDENING & INTERCHANGE IMPROVEMENTS

ESTM TOTAL PROJECT COST: $6,000,000-8,000,000



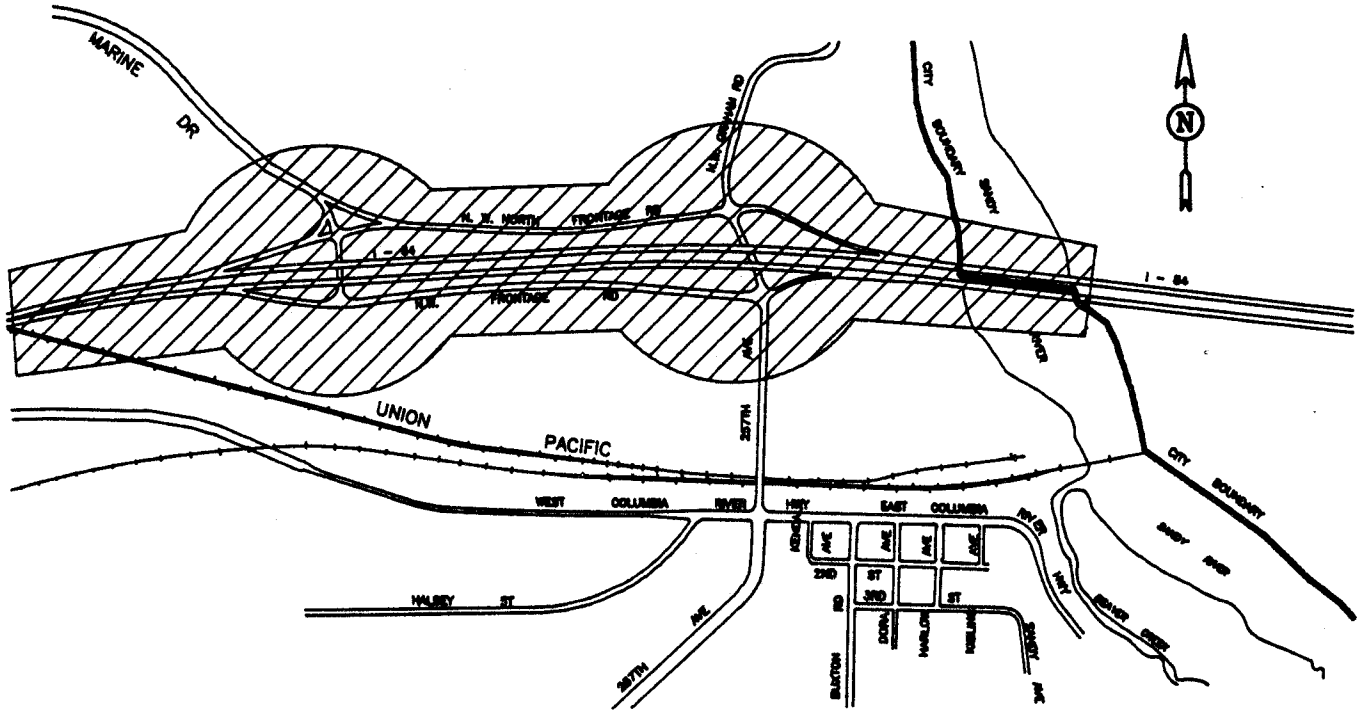
Project Description:
This project would construct additional lanes and improvements to the I-84 Interstate freeway system, including improvements to the Troutdale interchange as may be necessary to accommodate access and growth requirements.

Project Justification/Benefit:
This project will provide for a higher level of service between Troutdale and the City of Portland. It will improve the access to the Troutdale split diamond interchange and provide safer on/off ramps accordingly. This project has been determined necessary by the Oregon Department of Transportation and it is also necessary to provide service to Marine Drive, Graham Road, 257th Avenue, and the City of Troutdale.

Funding Notes:
This project would be funded primarily through Federal resources and/or Oregon Department of Transportation funds as may be appropriate.

#19

EXHIBIT MAP:



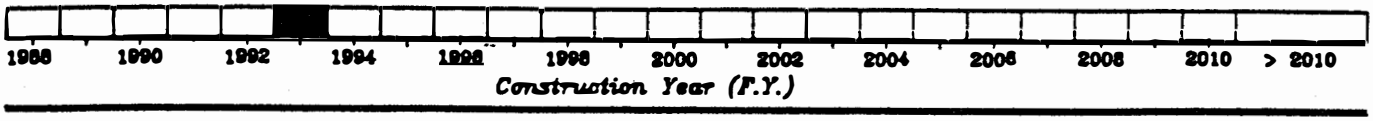
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #25

PROJECT: FRONTAGE ROAD/257TH AVENUE SIGNALIZATION

ESTM TOTAL PROJECT COST: $90,000



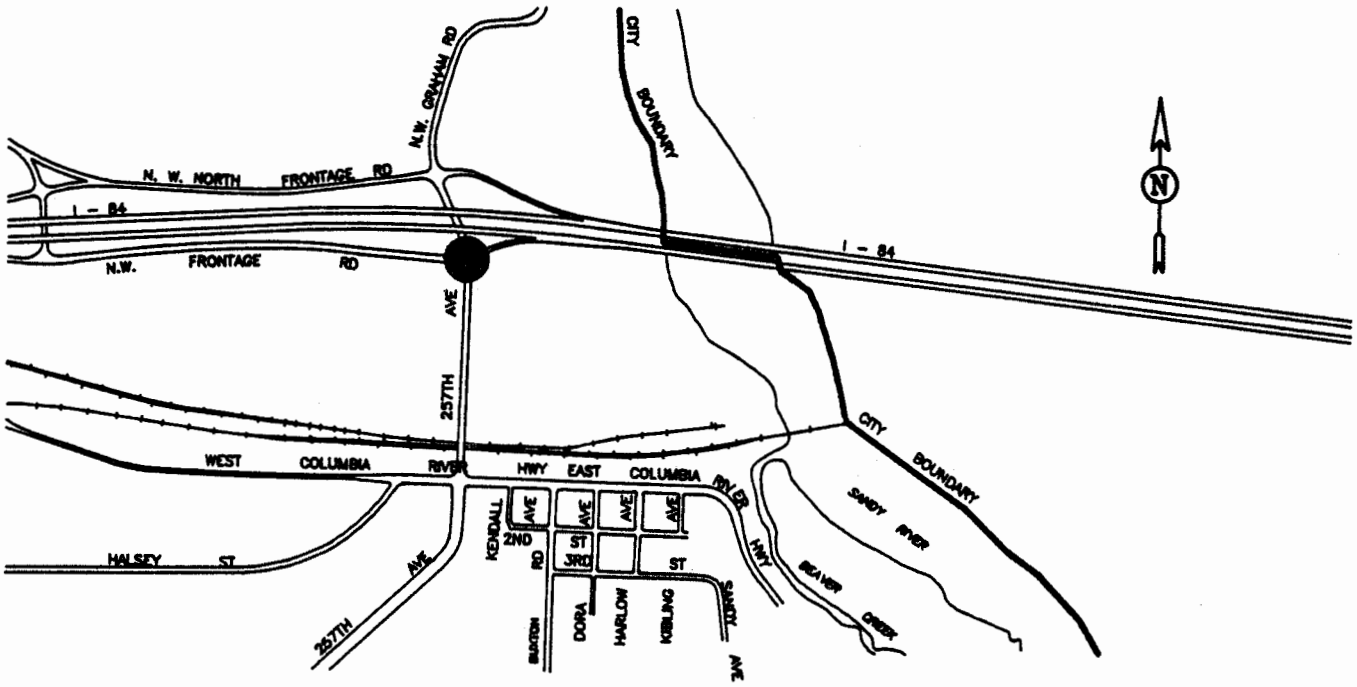
Project Description:
This project will construct a signal system commensurate with the geometry and traffic needs at the intersection of 257th, the I-84 South Frontage Road and the I-84 on-ramp.

Project Justification/Benefit:
Commercial an industrial development along the I-84 corridor has created demands for improved road and signalization projects. This intersection has a growing history of accidents and complaints. There are substantial delays during peak hour traffic, and these will be even more acute once pending development is completing.

Funding Notes:
This project would be funded by the Oregon Department of Transportation from its usual and customary resources.

#67

EXHIBIT MAP:



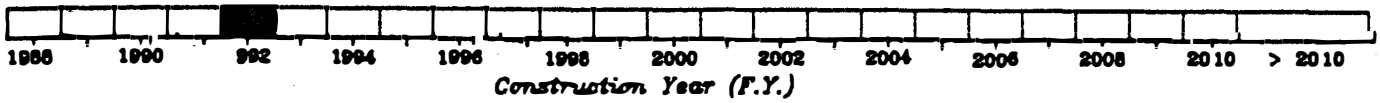
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #26

PROJECT: 257TH AVENUE/DEVELOPMENT ACCESS ROAD SIGNALIZATION

ESTM TOTAL PROJECT COST: $200,000



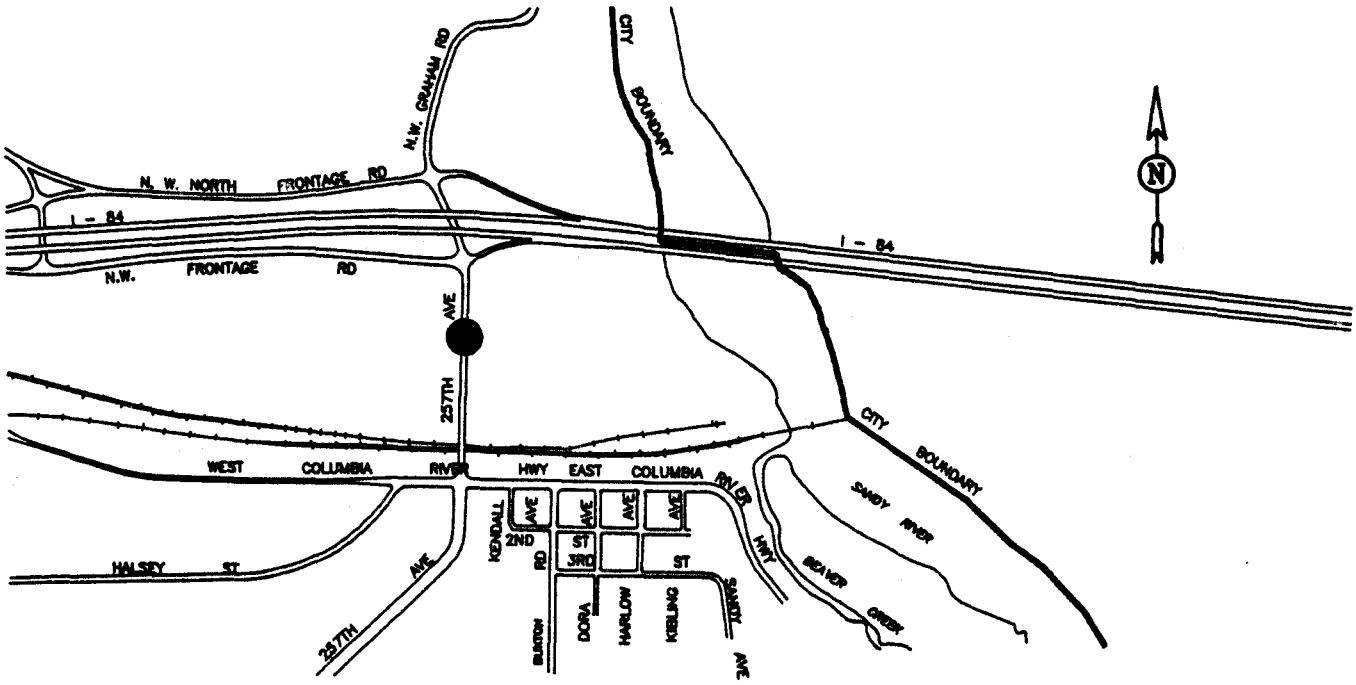
Project Description:
This project would construct a signal system commensurate with State standards to provide for efficient vehicular movement on 257th and at the same time provide efficient controlled access to development properties east of 257th between the I-84 freeway and the Union Pacific Railroad tracks.

Project Justification/Benefit:
As private development takes place along the I-84 corridor east of 257th, north of the Union Pacific Railroad tracks, and south of I-84, demands for adequate levels of through traffic service and provisions for ingress and egress to these developing areas need to be made. This project would ensure that both requirements would be met.

Funding Notes:
This project would be funded by the Oregon Department of Transportation and/or benefiting property owner as the Department of Transportation may require in its policies.

#68

EXHIBIT MAP:



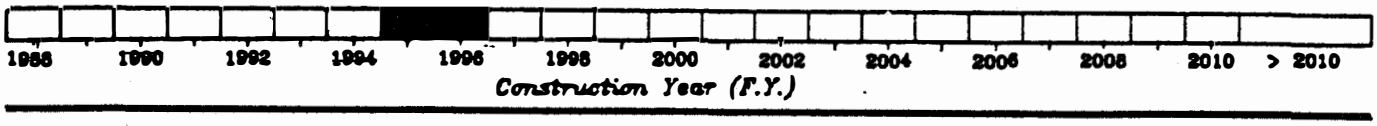
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #27

PROJECT: MARINE DRIVE/SUNDIAL ROAD CORRIDOR ROAD SYSTEM

ESTM TOTAL PROJECT COST: $500,000



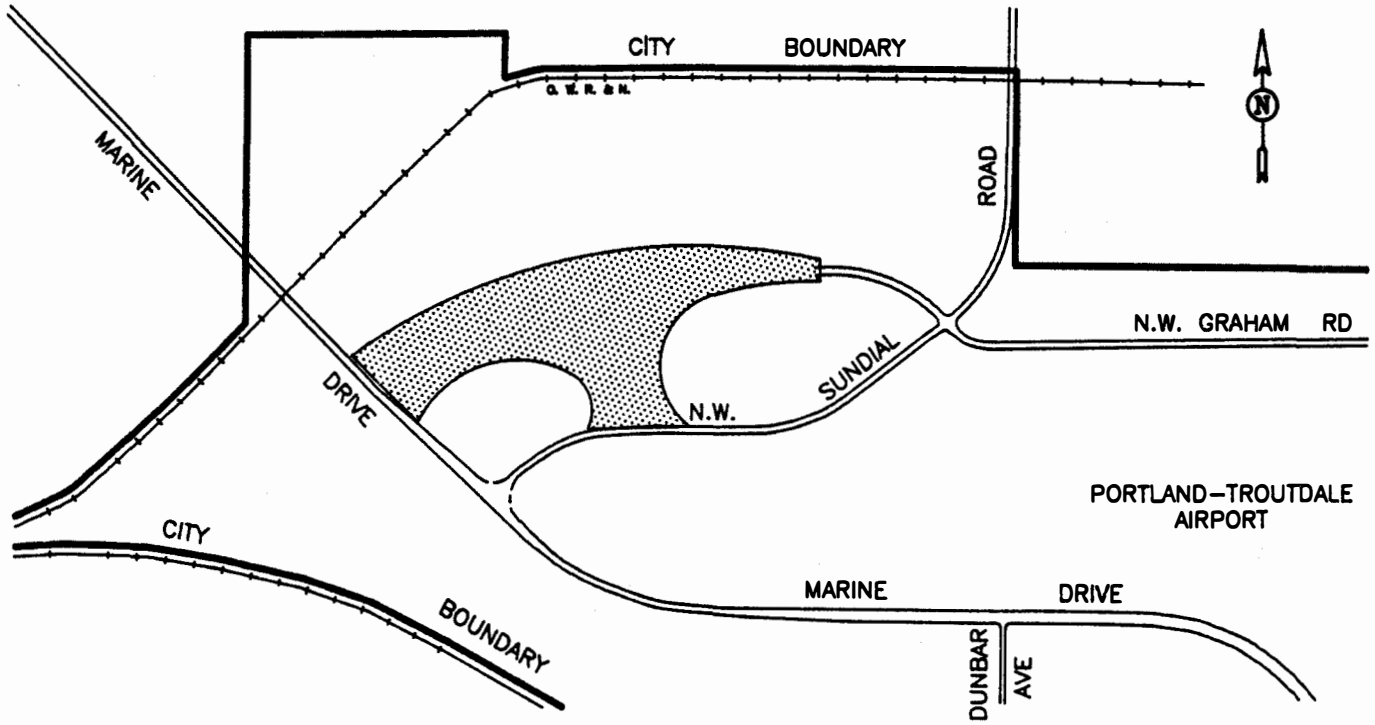
Project Description:
This project will provide local and/or neighborhood collector roadways to the industrial properties north of Marine Drive & Sundial Road and south of the Union Pacific Railroad spur. The project will includes roads, curbs and gutters, drainage facilities, sidewalks and other appurtenances necessary and required.

Project Justification/Benefit:
Roads within the depicted corridor will be necessary for the development of industrially zoned properties.

Funding Notes:
This project will be funded entirely by benefiting property owners.

#21

EXHIBIT MAP:



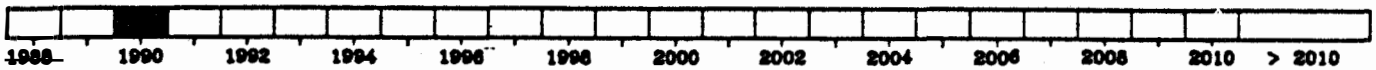
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #28

PROJECT: GRAHAM ROAD EXTENSION

ESTM TOTAL PROJECT COST: $95,000



Construction Year (F.Y.)

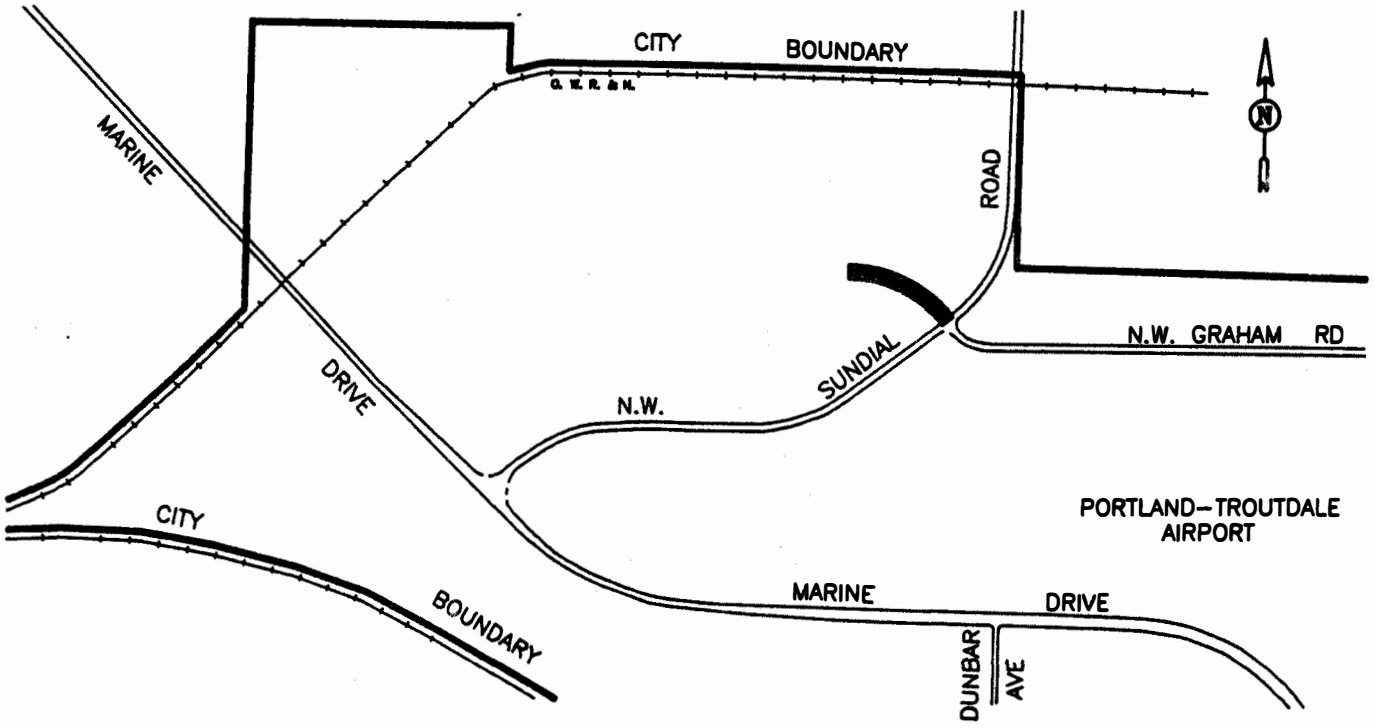
Project Description:
This project will construct 575 feet of local roadway complete with road, curbs and gutters, sidewalks where applicable and other facilities as required and incidental to the project.

Project Justification/Benefit:
This project is designed to benefit an industrial subdivision and will provide adequate access needs accordingly.

Funding Notes:
This project will be funded by the Port of Portland and/or the benefiting property owners.

#20

EXHIBIT MAP:



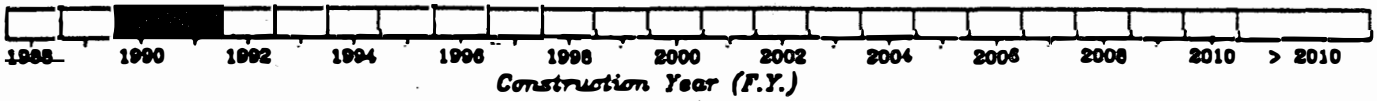
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #29

PROJECT: 35TH AVENUE EXTENSION

ESTM TOTAL PROJECT COST: $75,000



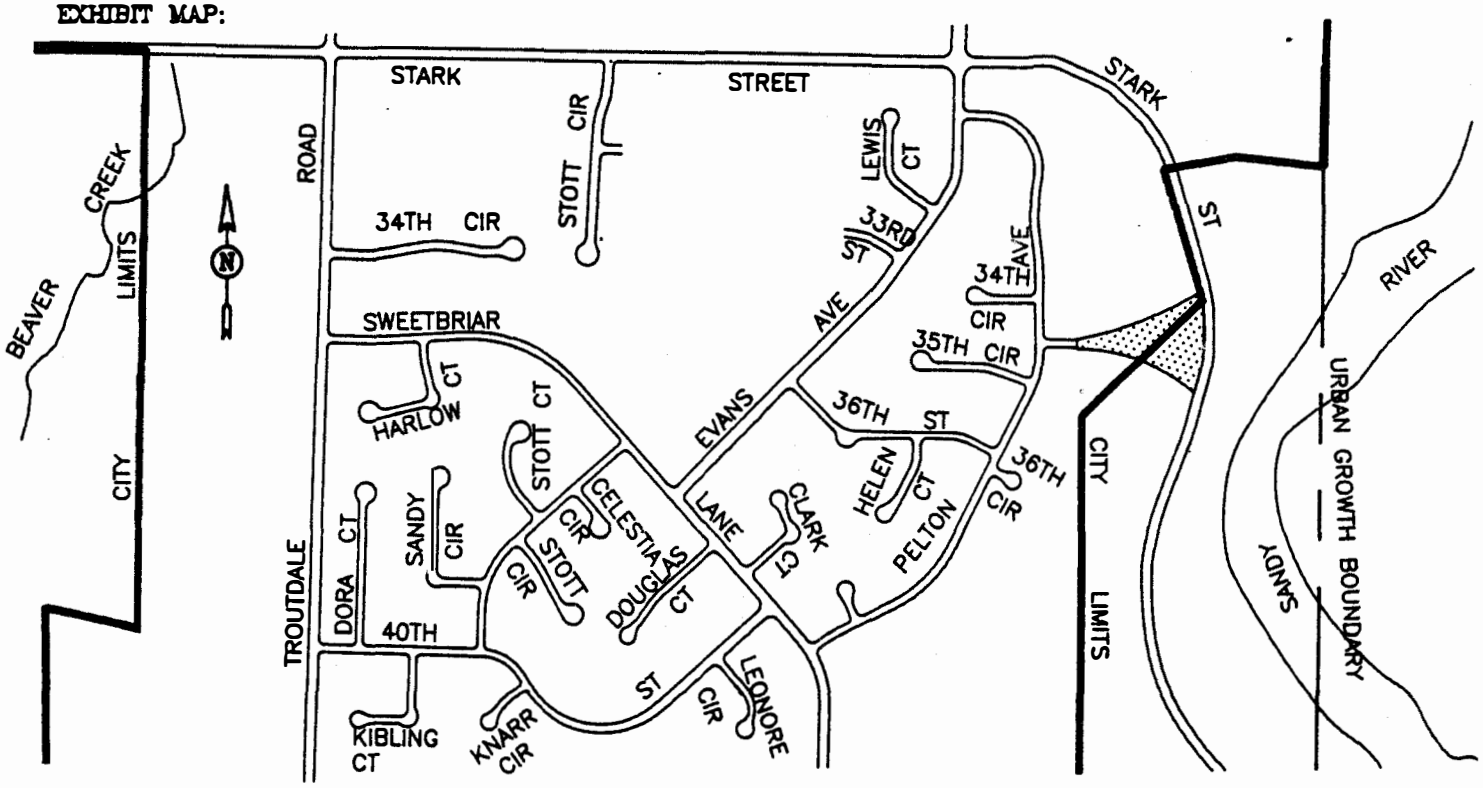
Project Description:
This project would construct approximately 550 feet of local roads from approximately Evans Avenue on the west to Stark Street on the east. This project would include road, curbs, gutters, sidewalks, storm drainage facilities and other items incidental to the project.

Project Justification/Benefit:
This project would provide an ingress/egress connector for the Sweetbriar subdivision and allow for additional residential development as well. The connector was contemplated and 35th Avenue was provided as a stub street in the Sweetbriar subdivision.

Funding Notes:
This project would be funded by benefiting property owners with the possibility of City participation.

#15

EXHIBIT MAP:



CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #30

PROJECT: STARK STREET / TROUTDALE ROAD SIGNALIZATION UPGRADE

ESTM TOTAL PROJECT COST: $75,000

1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 > 2010

Construction Year (F.Y.)

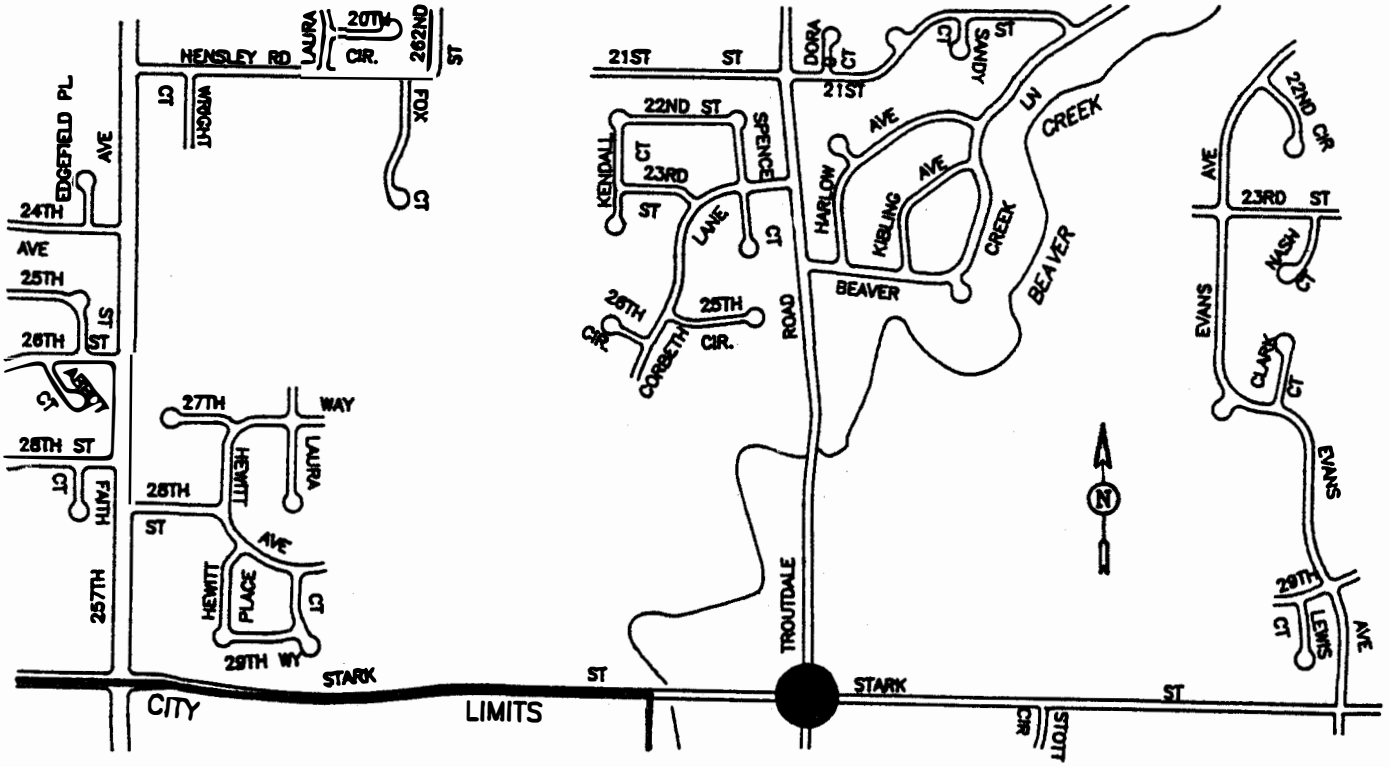
Project Description:
This project would construct a fully phased signal at the intersection of Troutdale Road and Stark Street commensurate with improvements with Stark Street.

Project Justification/Benefit:
The current "timed" signal at Stark Street and Troutdale Road will need to be upgraded to accommodate left hand storage base and automatic traffic sensing. These needs will be commensurate with improvements to both Stark Street and Troutdale Road, all of which will be required to accommodate growing facility demands resulting from increased commercial, multi-family and single family development in the southern portion of the City.

Funding Notes:
This project will be funded by Multnomah County from its usual and customary capital and/or renewal and replacement resources.

#64

EXHIBIT MAP:



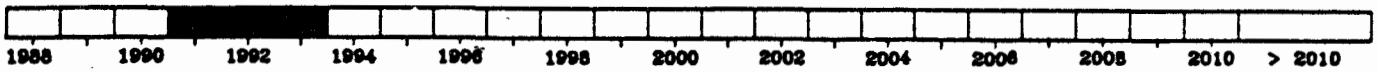
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #31 & 33

PROJECT: CHERRY PARK (GLISAN) / HENSLEY / 262ND LOOP

ESTM TOTAL PROJECT COST: $360,000



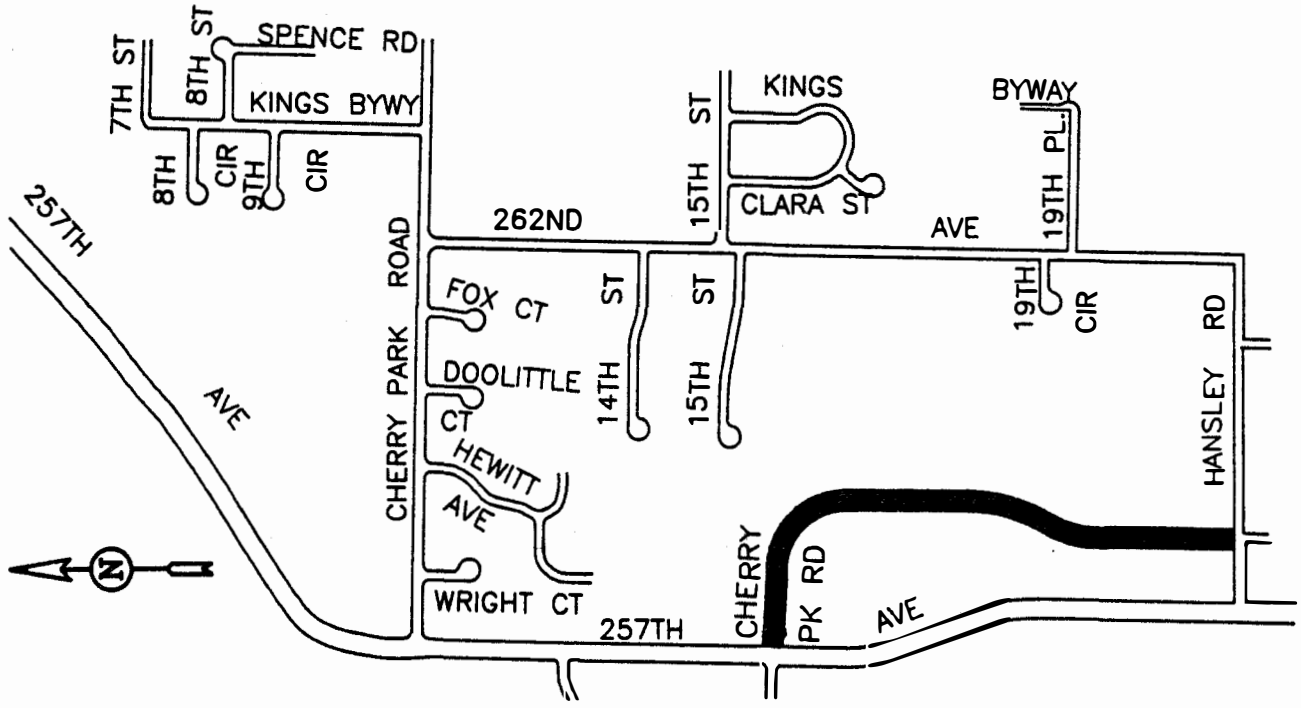
Project Description:
This project would construct approximately 1200 feet of local and neighborhood collector roadway together with sidewalks, curbs, gutters and other appurtenances as necessary.

Project Justification/Benefit:
This project will be required to accommodate a mix of development.

Funding Notes:
Project will be funded by benefiting property owners.

#55

EXHIBIT MAP:



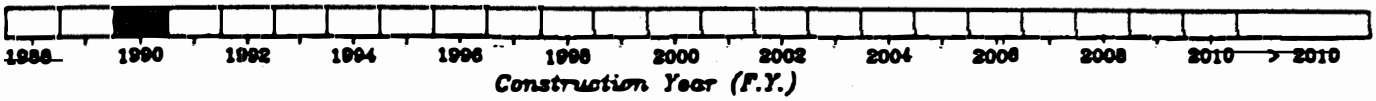
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #32

PROJECT: CEREGHINO DEVELOPMENT / ROAD SYSTEM

ESTM TOTAL PROJECT COST: $200,000



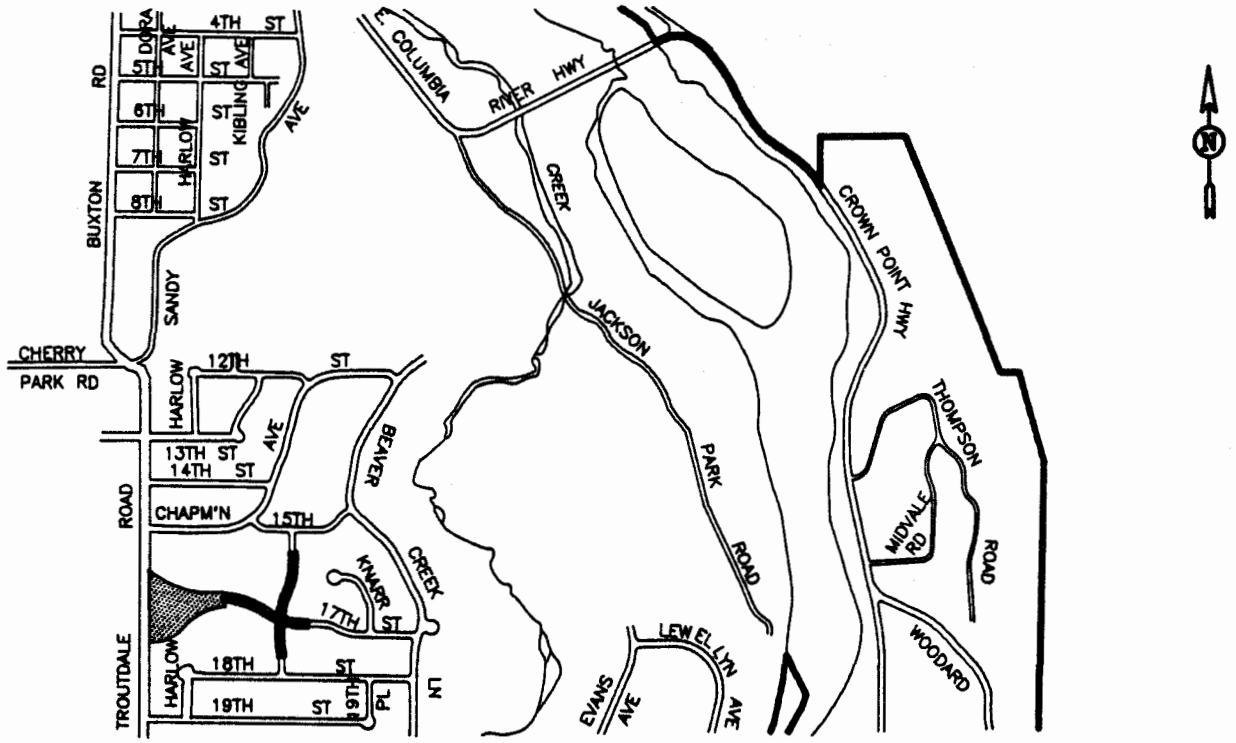
Project Description:
This project would construct local streets and cul-de-sacs to accommodate a future subdivision on a vacant parcel of land. It would include roads, sidewalks, curbs, gutters, storm drain facilities and other elements that may be incidental to the project.

Project Justification/Benefit:
This project is required for developing residential properties.

Funding Notes:
This project would be funded entirely by the benefiting property owner(s).

#9

EXHIBIT MAP:



CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: #34

PROJECT: TROUTDALE ROAD / UPGRADE(S)

ESTM TOTAL PROJECT COST: $240,000

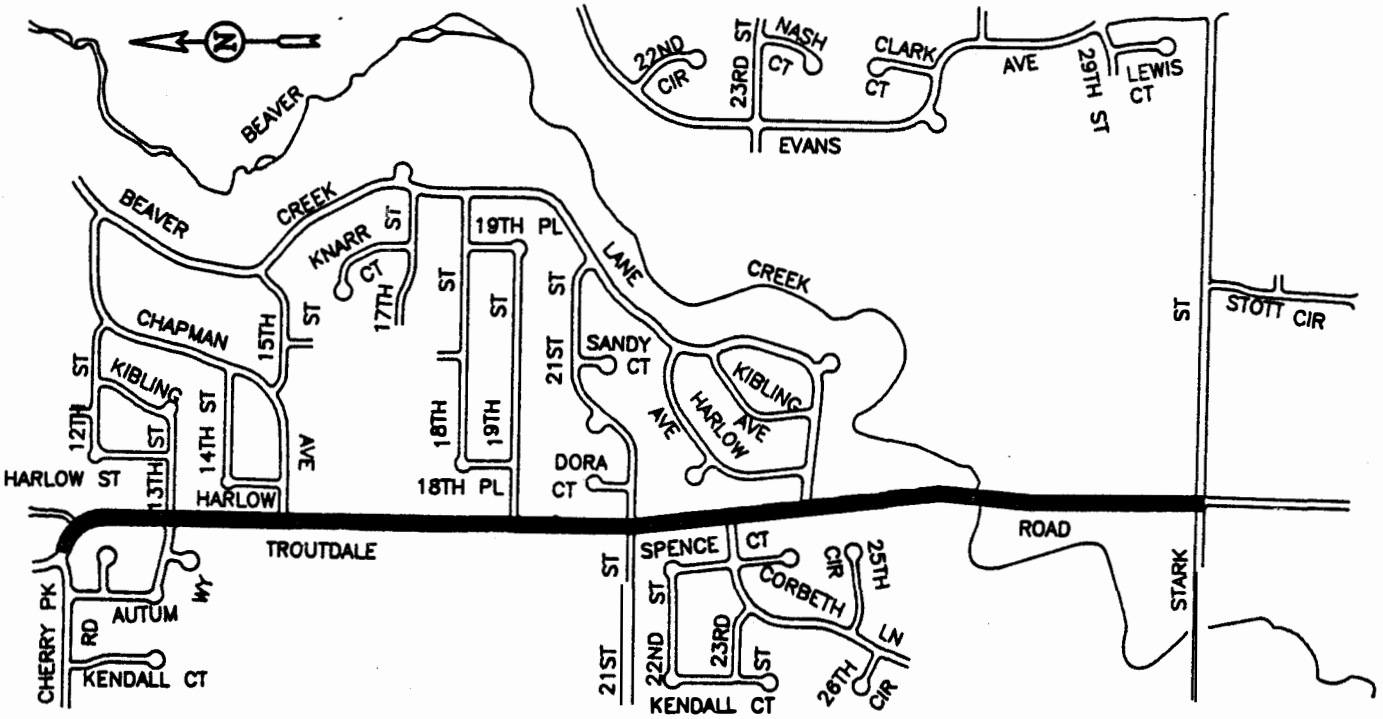
Project Description:
This project would widen and upgrade Troutdale Road from Cherry Park on the north to Stark Street on the south including left turn pockets where applicable (Stark Street to Beaver Creek Bridge), bike lanes on both sides, sidewalks on both sides and other geometry changes necessary to upgrade to standards for appropriate functional class.

Project Justification/Benefit:
Needed to improve residential access, additional bike lanes and pedestrian facilities.

Funding Notes:
Project costs paid by Multnomah County and benefiting property owners.

#69

EXHIBIT MAP:



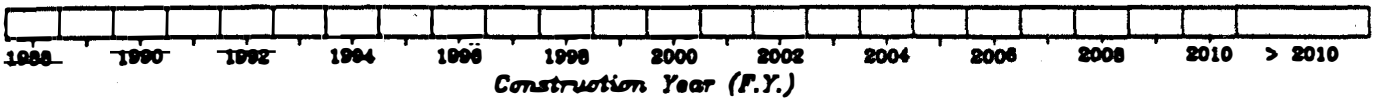
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: # N/A

PROJECT: BUS ROUTE IMPROVEMENTS

ESTM TOTAL PROJECT COST: ?



Project Description:
This project would provide bus access on 257th Avenue and Marine Dr.

Project Justification/Benefit:
As the Troutdale community grows together with industrial development in the north sector, additional bus access will be required to handle bus commuter needs. The north/south link through the community is provided by 257th Avenue from the City of Gresham on the south to the industrial area on the north. Marine Drive penetrates the Columbia south shore industrial area and would serve as an ideal east/west bus route. This project would benefit not just citizens of Troutdale commuting by mass transit facilities, but would also serve the region by providing access to MHCC and citizens of Gresham that may need public transportation to the Troutdale industrial areas and the Troutdale airport. The Marine Drive couplet with that route would then provide east/west public transit to the Columbia south shore industrial areas and their respective work centers.

Funding Notes:
This project would be funded through the usual Tri-met sources.

#2/23

EXHIBIT MAP:

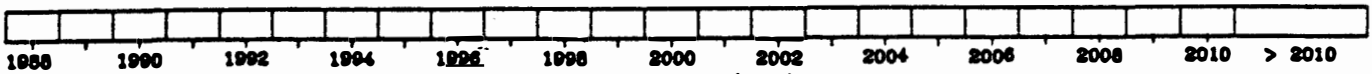
CITY OF TROUTDALE

PUBLIC FACILITIES PLAN/DATA SHEET

KEY MAP I.D. NUMBER: # N/A

PROJECT: LIGHT RAIL EXTENSION

ESTM TOTAL PROJECT COST: ?



Project Description:
Light rail currently terminates just east of the Gresham City Hall. It does not provide direct service to Mt. Hood Community College or the City of Troutdale. This project would construct the necessary facilities to provide service as planned and approved through the appropriate process and forum.

Project Justification/Benefit:
This project would benefit the community by providing direct downtown Portland access to Mt. Hood Community College and intermediate stops as well. It would provide a more functional and efficient access to other citizens in the East Multnomah County thereby improving the level of service of the Interstate and East County arterial road systems. In addition, these light rail extensions would reduce air pollution in proportion of the direct of vehicular traffic.

Funding Notes:
No funding sources identified.

#2/22

EXHIBIT MAP:

A MAP TOO LARGE TO SCAN IS INCLUDED IN ORDINANCE # 543-0. TO VIEW THIS MAP, PLEASE REFER TO THE MICROFILM.