# MUNICIPAL CODES AND REGULATIONS

by

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It has often been said that nothing is certain except death and taxes. One might add a third certainty -- governmental regulation. Whether we like it or not, governments do regulate many aspects of our business activities and even our personal conduct. In all liklihood, governmental regulation will increase, rather than diminish, as our society continues to urbanize and become increasingly interdependent.

Most of us have mixed feelings about regulations -- we object to them when they restrict us, but we can readily appreciate the need to control the other guy. This is as true of governmental officials as it is of private citizens and businesses. We become highly indignant if a zoning ordinance prohibits us from building an 8 foot high fence in our own backyard, but are quite relieved when it prevents our next door neighbor from opening an auto repair shop in his garage as a home occupation. There are obviously different points of view. This afternoon I would like to explore with you some of the municipal regulations that you can expect to encounter, especially as they pertain to underground engineering, and try to explain from the municipality's point of view the necessity of such regulations.

I know that there is much controversy and uncertainty surrounding the regulation of your industry at this time. At least three levels of government, federal, state, and local claim jurisdiction. I don't know how this will finally be resolved, but I am willing to bet that municipalities will retain at least some jurisdiction, particularly as it pertains to the use of municipal street rights-of-way for the location of cable television facilities.

## Municipal Franchises

The franchise agreement granting an operator the right to provide cable television service in the municipality and setting forth the conditions under which the franchise is granted is the basic agreement between the operator and the municipality. This agreement will almost always carry a provision requiring the operator to comply with all applicable municipal ordinances,

regulations, and standards. The franchise may also incorporate by reference the provisions of such national codes as the National Electrical Safety Code for work in the public right-of-way, the National Electrical Code for work on private property and inside buildings, and others as well as municipal ordinances relating to street openings and traffic control. The Occupational Safety and Health Act of 1970 is another regulation that will affect your operations, however, this is being administered at the state or national level rather than at the municipal level.

The franchise may be a very comprehensive, restrictive, and tightly worded document, or it may be very brief and less restrictive. As you know, municipalities until recently had no experience with cable television, and the franchises they granted reflected this fact. In the beginning it seems that most municipalities were concerned principally with the revenue to be realized from the franchise and neglected some other important considerations.. To provide some guidance, the National Institute of Municipal Law Officers in 1969 issued a model ordinance for the granting of non-exclusive community television franchises, which contains clauses concerning: compliance with applicable laws and ordinances, company liability, service standards, company rules, condition of street occupancy, preferential or discriminatory practices, extension policies, transfer of franchise rights, city rights in the franchise, payments to the city, rates, records and reports, term of the franchise and penalties, among others. I suspect that you are now finding municipalities becoming a little more sophisticated and perhaps demanding, in their approach to the writing of franchise agreements. I think that the franchises that you will be looking at soon will be concerned additionally with the capability of the system especially concerning: two-way communications; the number of channels required to be provided; the allocation of channels for different uses including free, dedicated non-commercial public access channel availability, educational channels, and municipal channels; the type of service to be provided such as meter reading and alarm systems, and communication and control capabilities such as information retrieval; the identification of priority groups to be served; and provision of production facilities and staff support for public programming among other requirements.

Street Opening Regulations

Apart from the terms of the franchise agreement itself, the municipal regulations which will have the greatest effect on your operation will probably be the street opening regulations. You may not have come across many of these yet since so much of your existing plant is aerial construction. However, it is clear, or ought to be clear to everyone, that the trend toward the undergrounding of electrical supply and communication facilities will continue. In 1971 approximately 88% of the new building sites served by the various telephone companies was via

underground construction and many telephone companies have programs to convert existing aerial facilities to underground. Forty-nine percent of all public power systems have adopted policies of undergrounding distribution facilities in all new residential subdivisions. Investor-owned electric utilities are also undergrounding their new installations and converting existing aerial plants. In most cases undergrounding is being done voluntarily but utility commissions in a number of states have moved, or are moving, to require the undergrounding of electric distribution and communication systems. With the current public concern for environmental protection and aesthetics, it seems likely that more state agencies will require undergrounding if the utility companies do not voluntarily move in this direction rapidly enough.

As most utilities are located in street rights-of-way rather than on private easements where accessibility may be a problem, it follows that the undergrounding of these facilities will result in their placement under street pavement. This joint use of right-of-way gives rise to a number of conflicts which municipalities have attempted to control through the adoption of street opening regulations.

The number of street cuts in a typical urban community may surprise you. In a recent study by APWA, the cities of Denver, Los Angeles, and Montreal reported 45,511, 40,000, and 25,000 street cuts per year respectively. In Montreal, it cost $2 million to restore these pavement cuts. The cutting of pavement for installation and maintenance of underground utility facilities obviously impedes the flow of traffic, poses safety hazards both to the traveling public and the utility workman, pollutes the environment with construction dirt and noise, inhibits access to abutting properties, and does some damage to the structural strength and serviceability of the street no matter how well the pavement is restored. We don't know precisely what the total system costs of cutting pavements are (we are attempting to calculate this in a study that we are now doing for the Federal Highway Administration), but one estimate of the present worth of the costs of the traffic delays caused by 30 cuts per year on a 1-1/2 mile section of road is $281,000. This includes only the time lost by the motorist and the increased vehicle operating costs. When one adds the cost of pavement restoration, the cost of accidents of all kinds attributable to utility work in street rights-of-way and the less tangible cost to the abutting property owner of noise and dirt and so on it is apparent that these costs are considerable. They are borne in varying amounts by the operator of the utility, the local government, the highway user, the abutting property owner and the utility customer. The municipal official charged with regulating the cutting of street pavements is attempting at least to minimize the cost to the municipality and the motoring public. This is done typically by requiring the

utility company to obtain a permit showing the location of the work, the amount of street to be opened and when the work is to be performed. The municipality may or may not require a performance bond. The municipality may require that work in certain busy areas of town not be performed during peak traffic hours, and that at least one lane of traffic be maintained at all times. The municipality will usually require that appropriate barricades and warning devices be installed to protect the public. A good guide to follow is the Manual on Uniform Traffic Control Devices for Streets and Highways published by the Federal Highway Administration which devotes about 53 pages to the subject of traffic controls for street and highway construction and maintenance operations. Many municipalities follow these practices although some have their own local modifications. The municipality is very much concerned with the backfilling of the trench, requiring either that the native backfill be compacted or if it is not suitable backfill material, that granular material be brought in. Backfilling requirements are often a bone of contention between the contractor and the municipal inspector. The municipality may also require that a temporary patch be placed over the trench and maintained by the utility company or its contractor for some period of time until traffic has compacted the fill. Some municipalities will allow or require the utility company or its contractor to restore the pavement according to municipal specifications; other municipalities prefer to do all pavement restoration with their own forces and bill the permittee for the cost of the restoration. Street opening regulations and permit fees vary from municipality to municipality and there are no nationwide standards for pavement restoration. However, a number of model ordinances have been aopted. The Southern California Chapter of the American Public Works Association and the Institute of Local Government of the University of Pittsburgh in cooperation with the Western Pennsylvania Chapter of the American Public Works Association both have developed good model street excavation ordinances. Many other municipalities also have good street opening regulations.

Municipalities take a very dim view of utilities cutting newly constructed or recently resurfaced pavements. Some municipalities have established programs whereby utility companies are given advance notice of the municipality's intention to pave or reconstruct various street segments. The utility is then given a specified period of time to install new underground facilities in that street or to do extensive repair work prior to the paving of the street after which the utility companies are either forbidden to cut the street except in an emergency, or are given stiff penalties for doing so within a specified number of years.

Some of the problems associated with the joint use of street rights-of-way for transportation and public utility facilities have already been mentioned. In addition to these problems, the accidental digup of underground utility lines is a problem that

plagues many communities and utility companies. Such accidental digups are quite numerous. In a recent report prepared by APWA for a Symposium on Pipelines Safety, a gas company serving a four county area in the state of Washington reported over 1100 accidental digups in one year. One telephone company has reduced its statistics to a per mile basis -- approximately one accidental digup per year per 14 miles of buried cable. These accidents cause temporary service disruptions which may be the source of minor inconvenience or be of major moment due to the inability to communicate with the police or fire department or a doctor in the case of an emergency. The damage of gas pipelines has resulted in a number of explosions and numerous deaths in recent years. So the problem of the accidental digup of underground utilities is a real and serious one. A number of remedies have been proposed to alleviate this problem. They include the establishment of utility coordinating committees and the holding of pre-construction conferences, "call before you dig" programs, field location programs by utility agencies, improved permit procedures, better methods of information dissemination, improved recordkeeping, improved construction specifications, better field supervision, more hand excavation, standard utility location guidelines, the permanent marking of underground facilities, the judicious use of pipeline encasement, better definition of responsibilities between the contractors and the utility agencies, and the increased use of utility tunnels for accommodating utility plant in congested urban areas.

A number of communities have attempted to establish utility location standards or guidelines in the hope that a more regular and orderly arrangement of underground utilities might alleviate this problem. The San Diego Chapter of APWA, the City of Phoenix, and a number of other cities and groups of cities around the country have established utility location guidelines. The typical recommended location for telephone and cable television lines is under the sidewalk. In the current project that APWA is doing for the Federal Highway Administration we are going to try to identify the advantages and disadvantages and total system costs and benefits for various alternative locations and configurations of the mix of utility lines typically found in an urban street. The end product of this study is to be a manual of practice which will establish among other things standard utility location guidelines. This study is scheduled for completion by next summer. A large number of utility companies and professional associations interested in this work are represented on the steering committee of this project. The National Cable Television Association is represented by Mr. Charles Henry, the chairman of this session.

Apart from complying with relevant municipal codes and regulations there is one voluntary activity that I would urge all operators of cable TV systems to engage in. That is to join with other utility companies and municipal departments in the

many utility coordinating committees that exist and are being formed throughout the country. It is the purpose of these committees to inform each member of the activities of the other agencies and to plan ways in which they might coordinate their efforts for their common good. The Los Angeles Substructure Committee and the Oregon Utility Coordinating Council are only two of the outstanding examples of what this kind of committee can accomplish on a voluntary basis. Many of these committees are responsible for "call before you dig" and "locate and stake" programs which protect their underground facilities and for the scheduling of their construction activities to realize the economies of joint trenching and in other ways minimize costs and delays.

Utility Tunnels

Another subject related to the underground location of utility lines is one that the American Public Works Association has been studying recently. That is the subject of utility tunnels. In 1970, APWA undertook a study sponsored by the Federal Highway Administration and a number of other agencies of the feasibility of utility tunnels in urban areas. This was followed last August by a conference co-sponsored with the Engineering Foundation on Engineering Utility Tunnels in Urban Areas. Both the proceedings of this conference and the report of this research project have been published and are available from the American Public Works Association. The conclusion of these investigations is that utility tunnels are technologically feasible. They have been used for years in Europe, Japan and to a limited extent on campuses and other large industrial and institutional sites in the United States. They can house the full range of power, communications, water, gas and other distribution systems and may well constitute the answer to the perennial problem plaguing many municipalities on how best to accommodate needed utility facilities in public street rights-of way without the mutual interference caused by the use in maintenance of these utility and highway systems. Placing utility lines in tunnels under public rights-of-way can avert the continual cutting of pavements and should facilitate the installation, inspection, replacement and maintenance of these facilities. A few technological problems must be resolved. The development of in-tunnel environmental standards and the engineering of safety and security systems must be accomplished, but these appear achievable. The institutional problems relative to working out the legal and cooperative arrangements for the construction, financing, management and joint use of these tunnels by a variety of separately owned utility agencies appears to be the major stumbling block. But it is expected that if the advantages of the concept can be domonstrated, ways will be found to overcome these obstacles, too.

Here are cross sections of some utility tunnels that are in existence. Notice the dimensions of the tunnel, the wide range of utilities included, and the placement of telephone cables on trays.

Slide 1 - Typical Section of a utility tunnel in London

Slide 2 - Utility Tunnel at Kiev, USSR

Slide 3 - Sidewalk Utility Tunnel in the Ginza District, Tokyo, Japan

Slide 4 - University of Washington Utility Tunnel

These tunnels are not dissimilar to the pipe galleries commonly found in water and wastewater treatment plants.

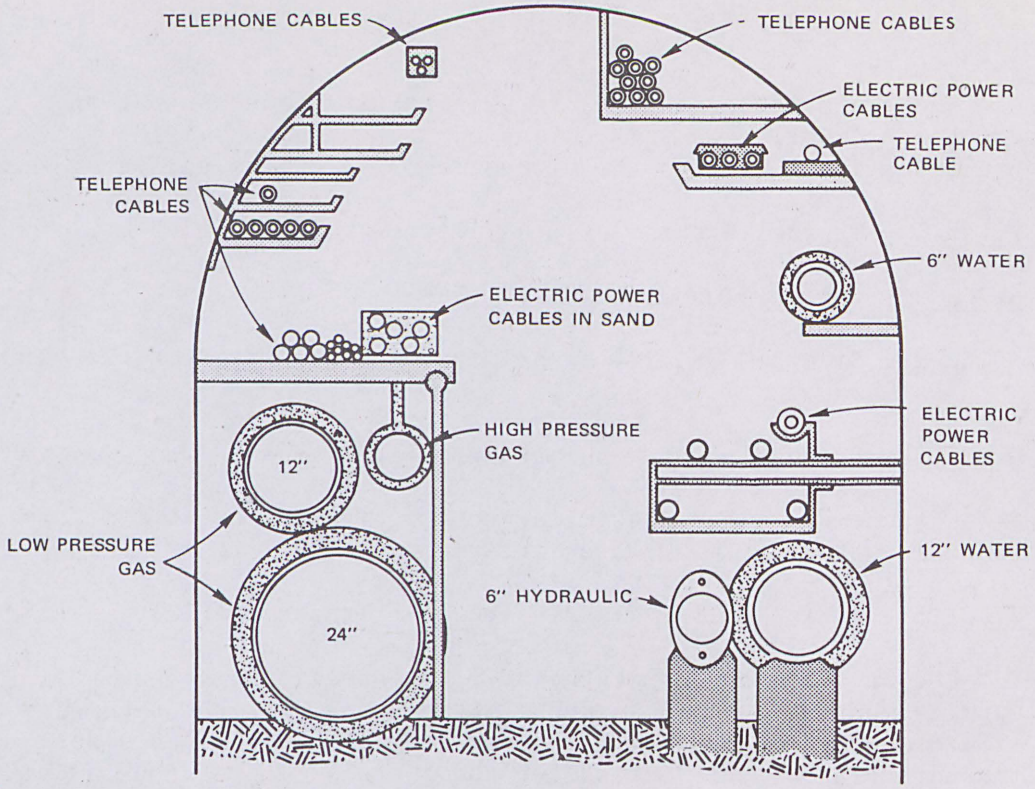
Slide 5 - A Pipe Gallery in A Wastewater Treatment Plant

We are convinced that the utility tunnel concept has real application, especially in dense urban areas, for the accomodation of underground utility systems. We urge you to consider the potential of this method for the installation of your underground facilities.

Conclusion

Time has permitted only a very cursory and generalized review of the municipal codes and regulations which affect the placement of cable television and other utilities in public street rights-of-way. In every case, it is necessary to consider the specific requirements of the particular agency with which you are dealing as practices vary from location to location throughout the country. I think you will find that most public works officials who administrer street regulation and utility coordination programs are honest and fair-minded individuals. They are doing the best they can to protect the considerable investment of the public in its highway system and to minimize the inconvenience and hazards to the public caused by the joint use of street rights-of-way for transportation and utility purposes. A cooperative attitude on the part of both the public official and the utility company will go a long way toward harmonizing the joint use of rights-of-way for the good of all concerned.

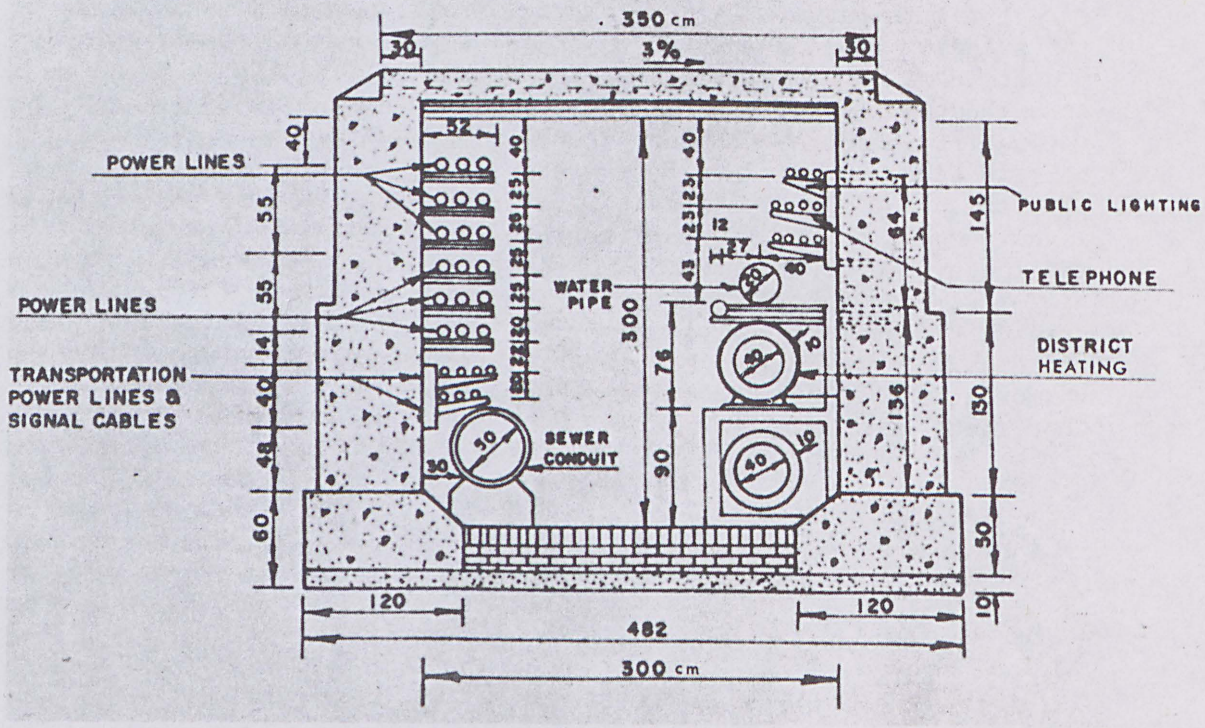
Slide 1.




Source: Reference 9, *APWA Report No. 39*

**FIG. 4—Typical section of a utility tunnel in London.**

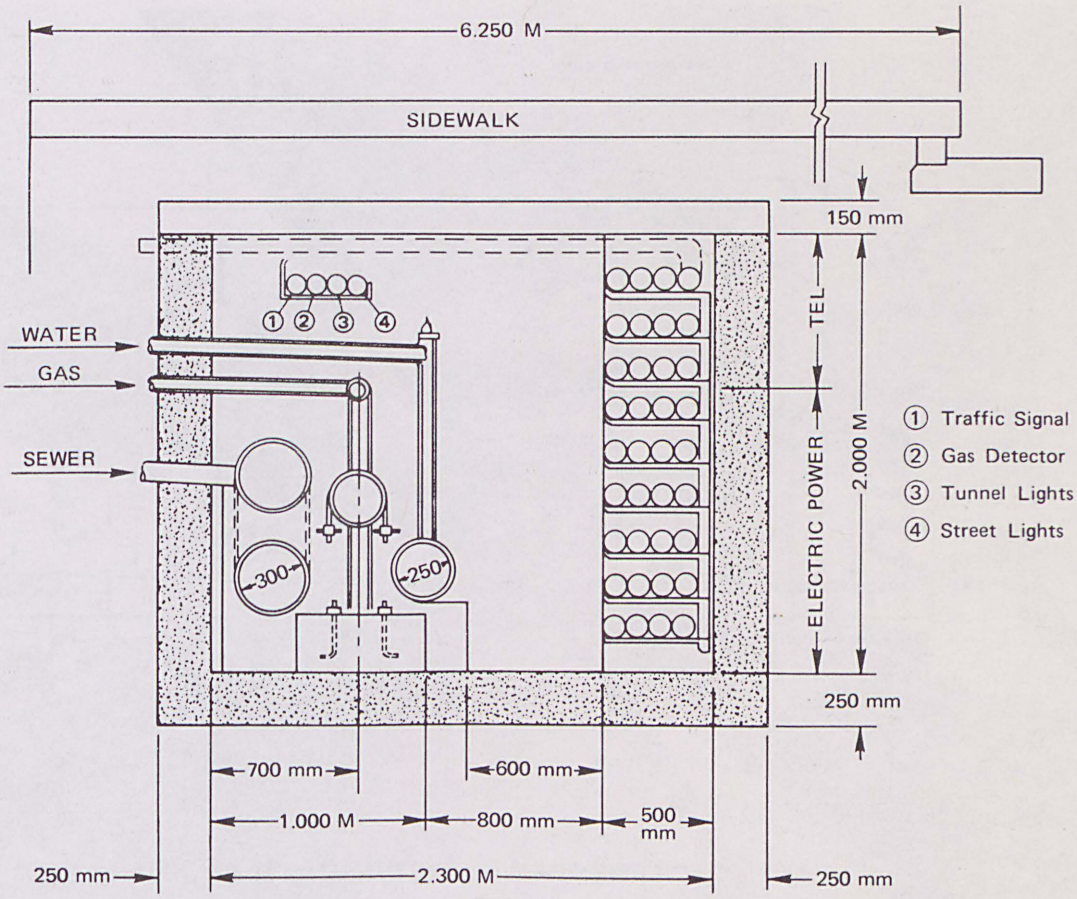
Slide 2.




Source: Reference 4, *APWA Report No. 39*

**FIG. 5—Utility tunnel at Kiev, USSR.**

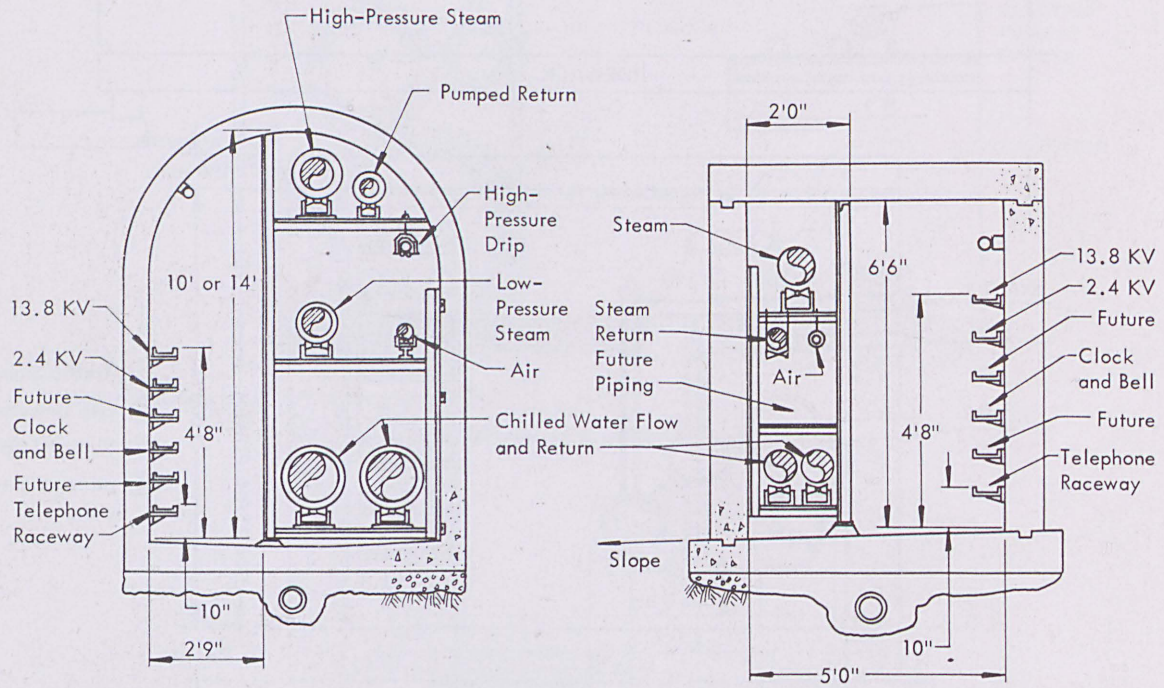
Slide 3.




Source: Reference 22

**FIGURE 26 – SIDEWALK UTILITY TUNNEL IN THE GINZA DISTRICT, TOKYO, JAPAN**

Slide 4.




**Left – Tunneling Construction**

**Right – Open Cut Construction**

Source: Oak Ridge National Laboratory

**FIGURE 1 – UNIVERSITY OF WASHINGTON UTILITY TUNNEL SECTIONS**

Slide 5.

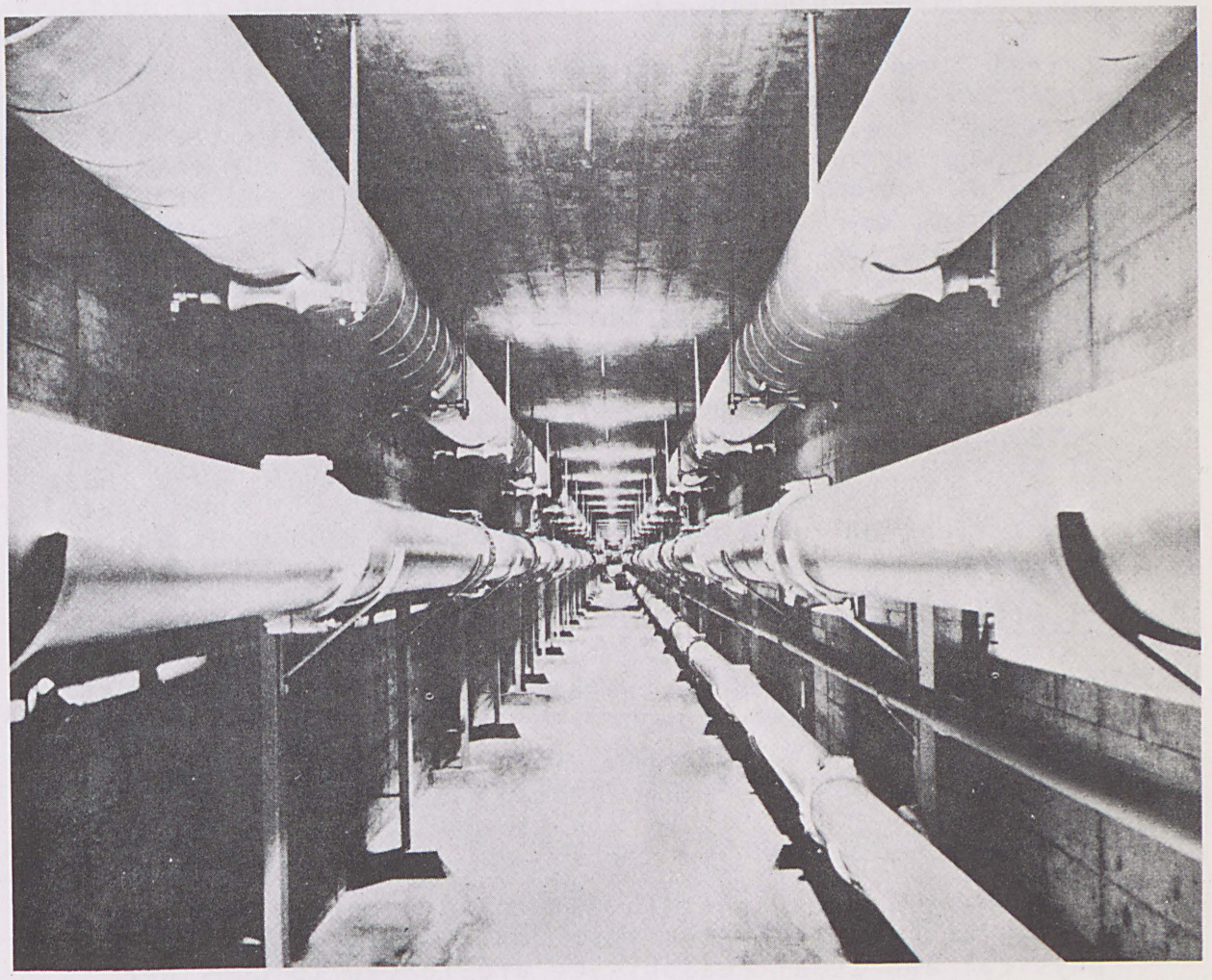


FIGURE 4 – A PIPE GALLERY IN A WASTEWATER TREATMENT PLANT INCLUDING STEAM, SLUDGE, FRESH AND RECLAIMED WATER LINES