METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO

MANUAL OF PROCEDURES
FOR
THE ADMINISTRATION
OF
THE SEWER PERMIT ORDINANCE

ENGINEERING DEPARTMENT
LOCAL SEWER SYSTEMS SECTION
METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO
100 East Erie Street
Chicago, Illinois 60611
(312) 751-5600

BOARD OF COMMISSIONERS

Hon. Terrence J. O’Brien, President
Hon. Kathleen Therese Meany, Vice-President
Hon. Gloria Alitto Majewski, Chairman of Finance
Hon. Frank Avila .................................................Hon. Barbara J. McGowan
Hon. Cynthia M. Santos .......................... ...Hon. Patricia Horton
Hon. Debra Shore ..............................................

OFFICERS

Richard Lanyon, Executive Director
Harold G. Downs, Treasurer
Frederick Feldman, General Counsel
Patrick Foley, Director of Personnel
Osoth Jamjun, Director of Maintenance and Operations
Louis Kollias, Director of Monitoring and Research
Darlene A. LoCasio, Director of Procurement and Materials Management
Keith Smith, Director of Information Technology
Joseph P. Sobanski, Director of Engineering
Jacqueline Torres, Director of Finance/Clerk
AN ORDINANCE

The manual of Procedures is an Ordinance providing minimum Engineering Standards for the design, construction, operation and maintenance of sewers, sewerage systems, treatment facilities and sewer connections designed to discharge directly or indirectly into collection and treatment facilities of the Metropolitan Water Reclamation District of Greater Chicago, or into waters within its territory, supplementing the Sewer Permit Ordinance.

For information or questions about this Ordinance, call the Local Sewer Systems Section of the MWRDGC’s Engineering Department.

Phone: (312) 751-3260
Fax: (312) 751-7957

Adopted September 3, 1970
Latest Amendment November 5, 1998
Foreword

The following pages of this Manual contain the design standards and the administrative requirements for the issuance of sewer permits and outline the procedures for permit application. The contents of this Manual have been formulated with the courteous assistance of a Blue Ribbon Committee representing a cross-section of concerned citizens, local governments, builders, contractors and consulting engineers, with a view towards facilitating the issuance of permits. It is hoped that this Manual will reach, and be used by as many hands as may be potentially involved in the preparation of the permit application and the other plans and documents related thereto. For if it does, it is our hope that it will properly serve the purposes it is intended for.

Let us assure you in this connection that the permit and all entries therein, together with the other information and documents related thereto, are individually designed to serve specific and related purposes in our overall responsibility for the protection of the health and welfare of the public. To be specific, the purposes served include: compliance of the project with the minimum design standards; prevention of pollution by controlling flows into the District systems, including flows into waters within the District; prevention of overflowing of the District interceptors and water reclamation plants; and, equally important, the assistance to the District in planning for the future to provide for flood control and to meet demands of population growth as reflected by new construction projects.

It is our sincere hope that this Manual will prove beneficial to you and that you will be generous in extending your cooperation and assistance so that, in turn, we will be able better to serve you and serve and protect the public.
# MANUAL OF PROCEDURES
FOR THE ADMINISTRATION OF THE
SEWER PERMIT ORDINANCE

Table of Contents

SECTION I-APPLICABLE RULES AND REGULATIONS

<table>
<thead>
<tr>
<th>Article</th>
<th>PERMIT REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1</td>
<td>Purpose</td>
</tr>
<tr>
<td>1-2</td>
<td>Permit Requirements</td>
</tr>
<tr>
<td>1-3</td>
<td>Exemptions</td>
</tr>
<tr>
<td>1-4</td>
<td>Administrative Waivers</td>
</tr>
<tr>
<td>1-5</td>
<td>Permittees</td>
</tr>
<tr>
<td>1-6</td>
<td>Joint Permittees</td>
</tr>
<tr>
<td>1-7</td>
<td>Permittees Under Previous Ordinance</td>
</tr>
<tr>
<td>1-8</td>
<td>Definitions</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Article</th>
<th>APPLICABLE RULES AND REGULATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-1</td>
<td>General</td>
</tr>
<tr>
<td>2-2</td>
<td>The Metropolitan Water Reclamation District of Greater Chicago</td>
</tr>
<tr>
<td>2-3</td>
<td>State of Illinois</td>
</tr>
<tr>
<td>2-4</td>
<td>U. S. Department of Housing and Urban Development</td>
</tr>
<tr>
<td>2-5</td>
<td>Standard Specifications for Water and Sewer Mains</td>
</tr>
<tr>
<td>2-6</td>
<td>Recommended Standards for Sewage Works (Ten State Standards)</td>
</tr>
</tbody>
</table>

SECTION II-DESIGN AND OTHER REQUIREMENTS

<table>
<thead>
<tr>
<th>Article</th>
<th>DESIGN REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-1</td>
<td>Minimum Design Standards</td>
</tr>
<tr>
<td>3-2</td>
<td>Design Slopes</td>
</tr>
<tr>
<td>3-3</td>
<td>Manholes, Drop Manholes</td>
</tr>
<tr>
<td>3-4</td>
<td>Protection of Water Mains</td>
</tr>
<tr>
<td>3-5</td>
<td>Materials</td>
</tr>
<tr>
<td>3-6</td>
<td>Workmanship</td>
</tr>
<tr>
<td>3-7</td>
<td>Design Flow</td>
</tr>
<tr>
<td>3-8</td>
<td>Curvilinear Sewer</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Article</th>
<th>SUPPLEMENTAL DESIGN REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-1</td>
<td>Overhead Plumbing</td>
</tr>
<tr>
<td>4-2</td>
<td>Datum</td>
</tr>
<tr>
<td>4-3</td>
<td>Pipe Bedding</td>
</tr>
<tr>
<td>4-4</td>
<td>Building Service Sewer</td>
</tr>
<tr>
<td>4-5</td>
<td>Connection of Building Service Sewer to Sewer Main</td>
</tr>
<tr>
<td>4-6</td>
<td>Inspection Manholes</td>
</tr>
<tr>
<td>4-7</td>
<td>Sound Engineering Practice</td>
</tr>
</tbody>
</table>

iv
Article 5  CONSTRUCTION WITHIN THE FLOOD PLAIN
  5-1 Issuance of Permit 6
  5-2 Minimum Requirements 6
  5-3 Conformance with Floodplain 7
  5-4 Floodplain Highwater elevation and Limits 7
  5-5 Statutory Floodplain Requirements 7

Article 6 STORM WATERS
  6-1 Separation of Storm Waters and Sanitary Sewage 7
  6-2 Combined Sewer Areas 8
  6-3 Separate Sewer Areas 8
  6-4 Storm Water Detention 9
  6-5 Correction of Existing Deficiencies 11

SECTION III- SUBMITTAL REQUIREMENTS

Article 7 PROCEDURES FOR SUBMITTALS
  7-1 Documents to be Submitted 14
  7-2 Consultation with the District 15
  7-3 Plans 15
  7-4 Project and Plan Titles 15
  7-5 Specifications 15
  7-6 Seals and Signatures 15
  7-7 The Illinois Professional Engineering Act 15
  7-8 Connection to Private Sewers 15

Article 8 RESIDENTIAL AND NON-RESIDENTIAL PROJECTS
  8-1 Trunks and Laterals 15
  8-2 Residential Multi-Family Buildings 16
  8-3 Commercial Buildings 16
  8-4 Industrial Buildings 17
  8-5 Treatment Facilities 17
  8-6 Lift Stations 17

SECTION IV- CONSTRUCTION, TESTING AND APPROVAL

Article 9 CONSTRUCTION AND INSPECTION
  9-1 Advance Notice 17
  9-2 Conformance to Plans and Specifications 17
  9-3 Construction Inspection 17
  9-4 Record Drawings 18

Article 10 TESTING AND APPROVAL
  10-1 Requirement for Testing 18
  10-2 Request for Final Inspection 18
  10-3 Construction without Advance Notice 18
  10-4 Maximum Allowable Infiltration 18
Article 1. PERMIT REQUIREMENTS

1-1. Purpose. The "Manual of Procedures for the Administration of the Sewer Permit Ordinance", contained herein, is issued for the implementation, administration and enforcement of the provisions of The Sewer Permit Ordinance of the Metropolitan Water Reclamation District of Greater Chicago, hereinafter known as the "District".

The Engineer of Local Sewers is designated as the authorized representative of the General Superintendent to receive and review permit applications, to inspect and approve construction under the permit, and to investigate violations of the Ordinance.

1-2. Permit Requirements. Except as provided in Article 1-3, Exemptions, and Article 1-4, Waivers, permits are required for all construction of sewers and sewer facilities within the territorial boundaries of the District, whether such construction is on private or public property. A permit is also required for existing buildings when the use of the building changes to a use for which a permit is required. Unless the Ordinance contains clear language granting a specific exemption as indicated herein, the intent is that no exemption is granted. It is the responsibility of the General Superintendent to interpret, administer and enforce the Ordinance within the authority granted to him by the Board of Commissioners.

1-3. Exemptions. A building service sewer (See Article 4-4) constructed to serve a single building devoted solely for residential purposes and containing less than twenty-five (25) dwelling units is exempt from the sewer permit requirement. Any extension of said service sewer is a violation of the Ordinance.

Any sewer constructed in the public right-of-way or easement, except for crossing, is considered a lateral and is not exempt from the permit requirement, even though it may serve a single building containing less than twenty-five (25) dwelling units. Except as herein provided, all other construction requires a permit.

1-4. Administrative Waivers. Administrative Waivers for some non-residential buildings may be available to Permittees meeting specific requirements which minimize or eliminate industrial wastes.

1-5. Permittees. The District recognizes as Permittees the parties listed below as provided in Section 2(h) of the Ordinance. The Permittee is held responsible for compliance with the conditions of the permit.

a. Any municipality, municipal corporation, sanitary district, utility company, township government or any other governmental body.

b. Any municipality, municipal corporation, sanitary district, utility company, township government or any other governmental body jointly with any individual, individuals or corporation where application is made for installations on private property.
c. Any individual, individuals, or corporation who owns property directly adjacent to an interceptor sewer of the District, where direct connection to said interceptor is made or is contemplated by the owner of said property for the sole, exclusive and perpetual use of the owner of said property (and where the direct connection serves only that property immediately adjacent to said interceptor), who seeks permission to discharge sewage, industrial waste or other waste into facilities of the District.

d. Any individual, individuals or corporation who provides an acceptable sewage treatment plant for the sole, exclusive and perpetual use of the owner of the property being served thereby, which discharges into any waters or interceptor sewer of the District in conformity with the Ordinances of the District, the Rules and Regulations of the Illinois Pollution Control Board, the Illinois Environmental Protection Agency, and the Statutes of the State of Illinois.

e. Any responsible individual, individuals, or corporation, (not otherwise qualified as permittee under the provisions of Section 2(H)2, 3 or 4 of the Sewer Permit Ordinance), upon presentation of satisfactory evidence of responsibility as determined by the Board of Commissioners, where construction of sewers or sewerage systems is contemplated to serve property owned by said individual, individuals, or corporation, in an unincorporated area, and the contemplated construction is intended for the sole, exclusive and perpetual use of the owner; provided that said unincorporated area is outside the jurisdiction of a local sanitary district and outside the area of a public utility company certificated for such service, and the township government declines to execute the permit application and to assume the obligations of a joint permittee, as provided in Section 2(H)2 of the Sewer Permit Ordinance.

1-6. Joint Permittees. In addition to those cases where the requirement for joint permittee is mandatory under the Ordinance, permits may be issued to joint permittees if so requested by the local governmental body having jurisdiction.

1-7. Permittees Under Previous Ordinance. Nothing contained in Article 1-4 shall operate to annul permits previously issued for the construction of sewers under the Ordinance then in effect, except that in unincorporated areas where a permit had been issued to an individual owner as Permittee, if said owner/Permittee shall abandon, or transfer the ownership of, the sewer system constructed under a permit and the area served becomes subsequently incorporated or is annexed to a duly constituted local government, sanitary district or utility company, the local authority assuming jurisdiction over the area shall thereby become the Permittee for said system and shall thereafter be responsible for the proper maintenance and operation of the system.

1-8. Definitions. For the purposes of the District, the following definitions shall apply:

a. "Sewage" means water-carried human wastes or a combination of water-carried wastes from residences, business buildings, institutions and industrial establishment, together with such ground, surface, storm or other wastes as may be present.

b. "Industrial Waste" means the solids, liquids or gaseous waste resulting from any industrial, manufacturing, trade or business process or from the development, recovery or processing of natural resources.

c. "Other Wastes" means all decayed wood, sawdust, shavings, bark, lime, refuse, ashes, garbage, offal, tar, chemicals and other substances except sewage and industrial wastes.

d. "Maintenance" means keeping the sewer lines, sewer systems, sewer facilities or sewage works and structures in satisfactory working condition and good state of repair,
(including but not limited to preventing any obstructions or extraneous materials or flows from entering said facilities, protecting said facilities from any damage, and keeping same free from defects or malfunctions), and making necessary provisions and taking necessary precautions to assure that said sewer facilities are at all times capable of satisfactorily performing the services, and adequately discharging the functions and producing the final results and purposes said facilities are intended to perform, discharge or produce.

Article 2. **APPLICABLE RULES AND REGULATIONS**

2-1. **General.** The most current copy of the rules, regulations, ordinances and policies listed below which are issued by the authorities indicated are incorporated herein by reference.

2-2. **The Metropolitan Water Reclamation District of Greater Chicago.**

   a. The Sewer Permit Ordinance.

   b. The Sewage and Waste Control Ordinance.

   c. The rules, regulations, resolutions, policies, directives and instructions that may be adopted or issued from time to time by the Board of Commissioners.

   d. The administrative procedures or directives issued by the General Superintendent.


   a. Pollution Control Board Technical releases and other applicable rules and regulations issued.

   b. The "Illinois Recommended Standards for Sewage Works" (Part 370).

2-4. **U.S. Department of Housing and Urban Development.**


2-5. **Standard Specifications for Water and Sewer Main Construction in Illinois.**

2-6. **Recommended Standards for Sewage Works; (Ten State Standards)**

The standards under Article 2-4, 2-5 and 2-6 are incorporated only to the extent that they are not in conflict with the above requirements or with any other provisions in this Manual.

SECTION II - **DESIGN AND OTHER REQUIREMENTS**

Article 3. **DESIGN REQUIREMENTS.**

3-1. **Minimum Design Standards.** All design and construction of sewers and sewer systems within the territorial boundaries of the District shall be governed by the minimum standards contained in the rules and regulations incorporated under Article 2 above, as supplemented by the provisions outlined herein.

All sewer systems, whether private or public, and whether constructed on private or public property, including sewer construction exempted from the permit requirement, shall
conform to the design standards and other requirements contained herein.

3-2. **Design Slopes.** Minimum and maximum slopes are tabulated below. The slopes are those that produce minimum and maximum velocities of 2.0 fps and 15.0 fps based on Kutter's Formula, with "n" equal 0.013, and the pipe flowing full, as provided in the rules and regulations of the Illinois Pollution Control Board.

<table>
<thead>
<tr>
<th>Sewer Size-Inches</th>
<th>Minimum Slope Percent</th>
<th>Maximum Slope Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 (Service Sewers)</td>
<td>1.00</td>
<td>33.0</td>
</tr>
<tr>
<td>8</td>
<td>0.40</td>
<td>22.0</td>
</tr>
<tr>
<td>10</td>
<td>0.28</td>
<td>15.0</td>
</tr>
<tr>
<td>12</td>
<td>0.22</td>
<td>11.0</td>
</tr>
<tr>
<td>14</td>
<td>0.17</td>
<td>9.0</td>
</tr>
<tr>
<td>15</td>
<td>0.15</td>
<td>8.3</td>
</tr>
<tr>
<td>16</td>
<td>0.14</td>
<td>7.8</td>
</tr>
<tr>
<td>18</td>
<td>0.12</td>
<td>6.5</td>
</tr>
<tr>
<td>21</td>
<td>0.10</td>
<td>5.1</td>
</tr>
<tr>
<td>24</td>
<td>0.08</td>
<td>4.2</td>
</tr>
</tbody>
</table>

3-3. **Manholes, Drop Manholes.** An exterior drop pipe should be provided for a sewer entering a manhole at an elevation of 24 inches or more above the manhole invert, as provided in the State of Illinois Title 35, Part 370. The minimum diameter of any manhole shall be 48 inches. The diameter of the drop pipe shall preferably be larger than, or of the same diameter as, the entering sewer. The minimum diameter of the drop pipe shall not be smaller than the diameter of the entering sewer by more than two nominal diameters (e.g. for 12", 15" and 18" entering sewer, the drop shall be 8", 10" and 12" respectively), provided that the minimum diameter of the drop pipe shall not be less than 8". If a smaller drop is desired, design calculations and configurations shall be submitted for review and approval. The drop pipe shall be encased in concrete. The flow channel through manholes shall be made to conform in shape and slope to that of the sewers. A bench shall be provided which shall have a minimum slope of two (2) inches per foot.

3-4. **Protection of Water Mains.** Water mains shall be protected in accordance with the requirements of the State of Illinois Recommended Standards for Sewage Works (Title 35 Part 370). Where a sewer main lateral or building service sewer crosses a water main, a minimum vertical separation of 18" shall be provided between the top of the lower pipe and the bottom of the upper pipe. Where the 18" vertical separation is not provided, the sewer shall be designed and constructed of pipe equal to water pipe or shall be encased in concrete for a minimum distance of 10 feet on each side of the water main.

3-5. **Materials.** All materials shall conform to the applicable ASTM, ASA or other national or accepted standards. When the materials indicated below are specified by the design engineer, the materials and the joints for pipe made of that material shall conform to the specifications shown, for sanitary sewer work in separate areas and for all sewer work in combined areas:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Vitrified Clay Pipe</td>
<td>ASTM C-700</td>
<td>ASTM C-425</td>
</tr>
<tr>
<td>Standard Strength</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extra Strength</td>
<td>ASTM C-700</td>
<td>ASTM C-425</td>
</tr>
<tr>
<td>b. Concrete Sewer Pipe</td>
<td>ASTM C-14</td>
<td>ASTM C-443</td>
</tr>
<tr>
<td>c. Reinforced Concrete</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Sewer Pipe
ASTM C-76
ASTM C-443

d. Asbestos Cement Pipe
ASTM C-428
ASTM D-1869

e. Truss Pipe
Solid wall 6” Dia.
SDR 35
ASTM D-2751
ASTM D-2751
Truss Wall 8” to 15” Dia.
ASTM D-2680
ASTM D-3212
ASTM D-2680

f. Cast Iron Soil Pipe
ASTM A-74
ASTM C-564

g. Ductile Iron Pipe
ANSI A21.51
ANSI A21.11

h. Polyvinyl Chloride (PVC) Pipe
6” to 15” Dia. SDR 35
ASTM D-3034
ASTM D-2855
ASTM D-3212

18” to 27” Dia. F/dy=46
ASTM F-679
ASTM D-2855
ASTM D-3212

Nothing contained in this Article shall be interpreted to mean nor imply an endorsement by the District of any material over another, nor an opinion by the District regarding the equality or superiority of the performance qualities of any of the materials.

3-6. Workmanship. As a minimum requirement all sewer pipes shall be laid in accordance with the applicable ASTM specification. The specifications for the construction of any sewers within the District shall not be less stringent than the latest version of the "Standard Specifications for Water and Sewer Main Construction in Illinois," adopted by a joint committee of the Illinois Society of Professional Engineers, Consulting Engineers Council of Illinois, Illinois Municipal League and The Associated General Contractors of Illinois. A copy of said specifications is obtainable from the organizations mentioned.

3-7. Design Flow. Average design flow for sanitary sewer shall be 100 gpcpd. Maximum design flow for sanitary sewer lines shall be determined by one of the equations indicated below; provided, however, that the maximum design flow for sewer laterals need not exceed 400 gpcpd and the maximum design flow for sewer mains and trunks shall not be less than 250 gpcpd.

Equation 1. \[ Q = \frac{500}{6\sqrt{P}} \]

Equation 2. \[ Q = 100\left(1 + \frac{14}{4+\sqrt{P}}\right) \]

Q = Maximum design flow, gpcpd
P = Population in thousands

3-8. Curvilinear Sewer. Available information based on field data falls short of providing conclusive evidence in support of the practice of curvilinear alignment for sewers 24” or less in diameter. Where local governments elect to permit the construction of curvilinear sewer, it is mandatory that available maintenance equipment be evaluated and proper equipment acquired.

When permitted by the local government, construction of sewers 24” or less in diameter on curvilinear alignment shall be subject to the following criteria.

a. Alignment: Alignment shall follow the general alignment of the street. Curvilinear sewer alignment shall be limited to curved street areas.

b. Curvature: Only simple curves may be used.

c. Radius: Minimum radius shall be no less than 200 feet.

d. Minimum Slope: The minimum slope shall be that which produces a minimum velocity of 2.0 fps. (Hydraulics of curvilinear alignment to be taken into account.)
e. **Manhole Location**: Manholes are required at the point of beginning and at the end of the curve and at the point of inflection. (PC, PT and PRC).

f. **Deflection**: Deflection of pipe shall not exceed the maximum deflection recommended by the joint manufacturer. The deflections shall be uniform and the finished installation shall follow a smooth curve.

**Article 4. SUPPLEMENTAL DESIGN REQUIREMENTS.**

4-1. **Overhead Plumbing.** After December 31, 1970, all new buildings with basements, floors, rooms or occupancy areas below ground level at the building site and served by a public or private sewer system, shall have overhead plumbing. No permit application will be accepted, nor any permits issued after December 31, 1970, to any municipality or local government unless said municipality or local government shall have adopted an ordinance requiring overhead plumbing, and a copy of said ordinance shall have been filed with the District, or that the permittee and/or co-permittee shall agree to comply with the requirements of this Article.

4-2. **Datum.** The datum shall be indicated on the plans submitted. All plans shall preferably be based on the Chicago City Datum which is established as: 0.00C.C.D=579.48 ft. above Mean Sea Level (1929 Adjustment) or 579.88 ft. above Mean Tide New York. If any other datum is used, a conversion equation shall be shown on the plans to relate the datum used to the Chicago City Datum.

4-3. **Pipe Bedding.** Bedding, other than concrete embedment, shall consist of gravel, crushed gravel, crushed stone or crushed slag, 1/4" to 1" in size. As a minimum, the material shall conform to the requirements of Article 704.01 of the "Standard Specifications for Road and Bridge Construction," of the State of Illinois or ASTM C-33. The gradation shall conform to gradation CA 11 or CA 13 of the Illinois Standard Specifications or to ASTM Gradation No. 67. The pipe shall be laid so that it will be uniformly supported and the entire length of the pipe barrel will have full bearing. No blocking of any kind shall be used to adjust the pipe to grade except when used with embedment concrete. Bedding shall be required for all sewer construction, except ductile iron pipe, and shall be of a thickness equal to 1/4th of the outside diameter of the sewer pipe with a maximum required thickness of eight inches (8") but shall not be less than four inches (4"). Where polyvinyl chloride (PVC) pipe is specified, the backfill material to a level two inches (2") over the top of the pipe shall be of the same material as the bedding material specified above and shall be carefully placed so as to completely fill the space under and around the pipe, in eight inch layers, loose measurement, and compacted to the satisfaction of the Inspection Engineer named in the permit.

Where unsuitable material is encountered at the grade established, all such unsuitable soil shall be removed under the pipe and for the width of the trench, and shall be replaced with well compacted bedding material, to the satisfaction of the Inspection Engineer named in the Permit.

Where rock is encountered, it shall be removed below grade and replaced with a cushion of well compacted bedding material having a thickness under the pipe of not less than eight inches (8") for all types of pipe including ductile iron pipe.

4-4. **Building Service Sewer.** Building service sewer is defined as a sewer pipe
receiving flow from a single building and connecting to a sewer main or lateral, and constructed on private property, except for street crossing. The maximum length of a building service sewer shall preferably be 120 ft. and shall not exceed 150 ft. If the length is exceeded an intermediate manhole shall be built. A manhole or clean-out shall also be installed every 150 ft. When the building service sewer connects to a sewer lateral of a size not larger than the size of the service sewer, a manhole shall be built at the point of connection. The minimum slope of the service line shall be one percent (1%).

Minimum design standards, and other requirements hereof, governing materials, joints, infiltration, workmanship and maintenance for sewer mains and laterals shall also apply to building service sewers. Horizontal and vertical alignment of the service sewer shall be uniform and shall follow a straight line alignment. There shall be no dips in the grade or fall of the line. Turns or bends required for the riser, if any, necessary to connect to the sewer wye or tee, shall be made with standard bends.

In those instances where the building service sewer is partially constructed from the sewer lateral or main to a point other than the building to be served, the pipe shall be tightly plugged using a manufactured plug. The plug shall be pre-wired by the manufacturer so that it can be firmly secured in place.

4-5. Connection of Building Service Sewers to Sewer Mains. Building service sewer shall generally enter the sewer main or lateral by way of an existing wye or tee. In the event of absence of the wye or tee, the connection to the sewer main or lateral shall be made by one of the methods indicated below. If another method is desired, a detail shall be submitted for review and approval by the District before the connection is made. Indiscriminate breaking of the sewer main pipe is not allowed.

a. Installation of a manhole.

b. Circular saw-cut of sewer main by proper tools ("Shewer-Tap" machine or similar), and proper installation of hub wye saddle or hub tee saddle, in accordance with manufacturer's recommendations.

c. Remove an entire section of pipe and replace with a wye or tee branch section. Pipe section shall be removed by breaking only the top of one bell. After the wye or tee branch is inserted, concrete shall be placed over the broken area to a minimum thickness of four inches (4") and to a dimension of eight inches (8") in all directions.

d. Using pipe cutter, neatly and accurately cut out desired length of pipe for insertion of proper fitting. Use "Band-Seal" couplings, or similar couplings, and shear rings and clamps to fasten the inserted fitting and hold it firmly in place. Follow manufacturer's recommendations for the installation.

4-6. Inspection Manholes. An inspection manhole having a minimum diameter of 48" is required for all commercial and industrial buildings. The manhole shall be constructed on the building service sewer before it connects to the sewer main, and preferably shall not be closer than five (5) ft. to the building. There shall be no flow into the inspection manhole except flow from the building or buildings for which the inspection manhole is intended. Manholes constructed on public sewer, or on sewers receiving other flows are not considered inspection manholes.

4-7. Sound Engineering Practice. The design and supplementary design requirements contained herein do not
Article 5. CONSTRUCTION WITHIN THE FLOODPLAIN

5-1. Issuance of Permit. No permit will be issued for sewer construction within any municipality lying totally or partially within a floodplain, unless the municipality shall have adopted a Floodplain Ordinance which has been filed with and approved by the District as to minimum requirements for the protection of the health and welfare of the public.

5-2. Minimum Requirements. Floodplain Ordinances adopted by the municipality shall include the following minimum requirements.

a. Elevations and Limits. Highwater elevations and limits of floodplain shall be established by the Ordinance based on the 100-year flood, as determined by the most recent and best available data listed in Article 5-4 below. If the 100-year flood information is not available, the regulatory base flood shall be the flood of record. When data of higher order becomes available, data of lower order shall not be used for regulatory purposes.

b. Building Openings. A door sill, window sill, top of foundation, or the bottom of any other opening in the outer walls of a building or structure shall be constructed at an elevation not lower than 12" above the established highwater elevation of the 100-year flood and not lower than 12" above the highwater elevation of the flood of record, if the 100-year flood information is not available.

c. Overhead Sewers. When the building wall encloses open space that is below the base flood elevation, gravity storm and sanitary sewer connections are specifically prohibited and overhead sewers are required for the sanitary connections and sumps for the storm sewer connections.

d. Existing Buildings. Existing buildings to be connected into a proposed sewer system within a floodplain must have sanitary connections designed to protect the sewer system from flooding.

e. Floodways. Adequate flood channel provisions should be provided. The width of the floodway should be determined in the field and should be protected from encroachment by the zoning ordinance and by the use of building setbacks. Floodway easements should be provided which permit necessary public channel maintenance and improvement work.

f. Floodproofing. That part of the structure constructed within floodplain areas below the highwater elevation must be floodproofed. The design must include measure to cope with sewer backup, groundwater seepage, and hydrostatic pressure.

g. Sanitary Manholes. All sanitary sewer manholes constructed in the floodplain must be provided with watertight, lock-type covers, or the rims must be raised to an elevation not lower than 12" above the highwater elevation.

5-3. Conformance with Floodplain Ordinance. All projects constructed within a floodplain area shall conform to the requirements of the floodplain ordinance adopted by the local government having jurisdiction over the area in which the project is located.
is located. The portion of the project lying within the floodplain shall be delineated and the limits of the floodplain shall be clearly indicated on the overall plans submitted to the District as part of the permit application.

5-4. **Floodplain Highwater Elevation and Limits.** In reviewing submittals for sewer permits, the District will base its review on the highwater elevations and limits of the 100-year flood as established by the most recent and best available data. If the 100-year flood information is not available, the review will be based on the flood of record data. The data which will be used by the District is listed below in descending order of overall accuracy, completeness, and currentness. When data of higher order becomes available, data of lower order will not be used.

1. HUD Flood Insurance Studies (FIS), if certified by Illinois Department of Transportation, Division of Water Resources (IDOT-DWR).
2. IDOT-DWR Regulatory Floodplain Maps and Profiles.
4. Other detailed 100-year flood studies, if certified by IDOT-DWR.
5. HUD Flood Hazard Boundary Maps (FHBM) and Approximate FIS Data.
6. USGS Maps of Flood-prone Areas.
7. USGS-NIPC Hydrologic Investigation Atlases (Floods of Record).

When either the HUD Flood Hazard Boundary Maps or the USGS Maps of Flood-prone Areas are used to determine the limits of the floodplain, then regulatory highwater elevations shall be those of the flood of record.

5-5. **Statutory Floodplain Requirements.** All construction in the floodplain must meet the requirements of the Rules and Regulations issued by the Illinois Department of Transportation, Division of Water Resources, pursuant to "An Act in Relation to the Regulation of the Rivers, Lakes, and Streams of Illinois" as amended. For any construction within the floodplain, the Illinois Department of Transportation permit for such construction or, in the alternative, a written statement from the Illinois Department of Transportation that no permit is required shall be submitted to the District prior to the issuance of a District permit.

Article 6. **STORM WATERS.**

6-1. **Separation of Storm Waters and Sanitary Sewage.** Except as provided in Article 6-2 below, all new sewer construction shall provide two separate and distinct sewer systems as follows:

a. **Storm Sewer Systems.** The system shall be for the collection and conveyance of surface run-off and other storm waters. All storm waters shall be collected and conveyed in a pipe or ditch system to the point of discharge in the receiving natural or man-made stream or drainage ditch. No storm waters shall be allowed to enter the sanitary sewer systems except that in "Combined Sewer Areas" only, the storm waters are allowed to be discharged into the District interceptors.
b. **Sanitary Sewer Systems.** The system shall be for the collection and conveyance of sanitary sewage consisting of domestic and other water-borne wastes. All sanitary sewage shall be collected and conveyed in a pipe system to the point of discharge into an existing sanitary sewage system, District interceptor or treatment plant. No sanitary sewage shall be allowed to enter any storm sewer system or discharge onto the ground or into receiving streams, without first having been treated.

6-2. **Combined Sewer Areas.** In areas designated as "Combined Sewer Areas" on the District maps, the following requirements shall apply:

a. **Separation.** Complete separation of sewers shall be provided within the property lines.

b. **Detention.** Detention shall be provided and/or permanent constrictions shall be built on the storm sewer system to control the flow into the existing combined system in accordance with the requirements of the local government.

c. **Down-Spouts.** All down-spouts or roof drains shall discharge onto the ground or be connected to the storm or combined sewer. No down-spouts or roof drains shall be connected to the sanitary sewers.

d. **Footing Drains.** Footing drains shall be connected to sump pumps, and discharge shall be made into storm sewers, combined sewers or drainage ditches. No footing drains or drainage tile shall be connected to the sanitary sewer. After December 31, 1970 all new construction shall conform to the requirements of this paragraph. No permit application will be accepted, nor any permits issued after December 31, 1970 to any municipality or local government unless said municipality or local government shall have adopted an ordinance reflecting the requirements of this paragraph and a copy of said ordinance shall have been filed with the District, or that the permittee and/or co-permittee shall agree to comply with the requirements of this Article.

e. **Floor Drains.** Floor drains in basements shall be connected to sump pumps and discharged to the sanitary or combined sewers.

f. **Sump Pumps.** Sump pumps installed to receive and discharge ground waters or other storm waters shall be connected to the storm or combined sewers or discharge into a drainage ditch. Sump pumps installed to receive and discharge floor drain flow or other sanitary sewage shall be connected to the sanitary or combined sewers. A sump pump shall be used for one function only, either the discharge of storm waters or the discharge of sanitary sewage.

6-3. **Separate Sewer Areas.** In areas served by separate sewer systems, the following requirements shall apply:

a. **Down Spouts.** All down-spouts or roof drains shall discharge onto the ground or be connected to storm sewer. No down-spouts or roof drains shall be connected to the sanitary sewers.

b. **Footing Drains.** Footing drains shall be connected to sump pumps, and discharge shall be made into storm sewers, combined sewers or drainage ditches. No footing drains or drainage tile shall be connected to the sanitary sewer. After December 31, 1970, all new construction shall conform
to the requirements of this paragraph. No permit application will be accepted, nor any permits issued after December 31, 1970, to any municipality or local government unless said municipality or local government shall have adopted an ordinance reflecting the requirements of this paragraph and a copy of said ordinance shall have been filed with the District, or that the permittee and/or co-permittee shall agree to comply with the requirements of this Article.

c. **Floor Drains.** Floor drains in basements shall be connected to sump pumps and discharged to the sanitary sewers.

d. **Sump Pumps.** Sump pumps installed to receive and discharge ground waters or other storm waters shall be connected to the storm sewer or discharge into a drainage ditch. Sump pumps installed to receive and discharge floor drain flow or other sanitary sewage shall be connected to the sanitary sewers. A sump pump shall be used for one function only, either the discharge of storm waters or the discharge of sanitary sewage.

e. **Completion of Storm Sewer System.** The construction of the proposed storm sewer system shall be completed before the sanitary sewer system is put in service. When compliance with this requirement may cause an undue hardship to the Permittee, the Permittee shall so notify the District and the District may waive this requirement if the conditions so warrant.

f. **Window Well and Area-Way Drains.** No window well or area-way drains shall be connected to the sanitary sewer.

6.4 **Storm Water Detention in Unsewered and Separate Sewered Areas.**

a. **General.** It is recognized that the receiving streams within the District do not have the capacity to receive and convey the increased storm water runoff resulting from rapid urbanization occurring in many areas. These receiving streams are subject to frequent flooding which results in a growing rate of property damage.

It is the intent of Section 3(B) of the Sewer Permit Ordinance to encourage local governments and developers to jointly participate in providing detention storage to eliminate the excessive runoff during heavy storm periods. Where impervious areas are planned or contemplated, it is the intent that detention be provided as required by the provisions hereinafter set forth. It is proposed that well maintained landscaped areas would be provided to act jointly as detention reservoirs and recreation facilities or aesthetic focal points in new village parks, either in incorporated or unincorporated areas, forest preserve areas, county parks, housing developments, shopping centers, industrial parks, etc. Other control methods to regulate the rate of storm water discharge which would be acceptable include detention on flat roofs, parking lots, streets, lawns, underground storage, oversized storm sewers with restricted outlets, etc.

It is recognized that in order to better serve the long-range interests of the local communities and the Metropolitan area, comprehensive basin-wide planning for flood control should be formulated, adopted and implemented. Comprehensive planning is far more beneficial than the proliferation of small, on-site detention areas, although on-site detention does provide protection and is acceptable for compliance with this Ordinance. The District may be called upon by the local governments to render advisory, technical and other assistance for the
formulation and implementation of a drainage plan.

b. Requirements. Pursuant to the provisions of Section 3(B) of the Sewer Permit Ordinance, a sewer permit will not be issued after January 1, 1972, unless (1) The permittee (governmental body) has adopted a Storm Water Detention or Flood Control Ordinance acceptable to the District, and has on file with the District, an approved drainage plan and schedule for its implementation, or (2) The permittee or co-permittee provide detention of storm water runoff as set forth in the following criteria.

(1) Allowable Release Rate. The release rate of storm water from all developments requiring detention shall not exceed the storm water runoff from the area in its natural undeveloped state.

Because of the flat conditions of the land in this area, channel configurations cut by nature are generally unable to handle the runoff from high intensity rainfalls and results in flood plain storage or spreading of runoff over the land areas during the larger storm periods. In order not to increase the runoff from such areas after development, the release rate must be limited to the carrying capacity of these natural channels.

The District will accept the release rate of not greater than that calculated from a storm of three (3) year frequency with a runoff rate coefficient of 0.15, unless the applicant can show by his detail calculations, which are acceptable to the District, that the discharge rate of the natural outlet channel serving the area is greater.

(2) Bypass. Drainage systems shall have adequate capacity to bypass through the development the flow from all upstream areas for a storm of design frequency assuming that the land is in a fully developed state under present zoning or zoning proposed under a Comprehensive Plan. The bypass flow rate shall be computed utilizing a runoff coefficient of not less than 0.35. An allowance will be made for upstream detention when such upstream detention and release rate has previously been approved by the District and that evidence of its construction can be shown.

(3) Design Storm. The live detention storage to be provided will be calculated on the basis of the 100-year frequency rainfall as published by the U.S. Weather Bureau for this area. The detention volume required will be that necessary to handle the runoff of a 100-year rainfall, for any and all durations, for the fully developed drainage area tributary to the reservoir, less that volume discharged during the same duration at the approved release rate.

c. Exemptions. Under the provisions of this article, storm water detention facilities meeting the criteria and requirements established herein are not required by the District for the following projects, provided that the available outlet capacity is adequate as determined by the Municipal Engineer. If the outlet capacity is not adequate, then detention as determined by the Municipal Engineer will be required to store that portion of the runoff exceeding the outlet capacity.

(1.) Real estate developments occupied or operational prior to January 1, 1972. If redevelopment, thereof in whole or in
part, subsequently occurs, the exemption shall cease. Redevelopment occurs when a permit application is made to the District for a new sanitary sewer in the original development area. Redevelopment requires storm water detention for the entire original development area.

(Amended at the Board Meeting of November 5, 1998)

(2) Non-residential projects having a total area of less than five acres.

(3) Residential non-single family projects having a total area of less than five acres.

(4) Residential single-family projects having a total area of less than ten acres.

d. Special Provisions:

(1.) Multiple Outlets. In order to eliminate small multiple outlets, generally designs requiring a release pipe of less than four (4) inches in diameter are not acceptable.

(2) Affidavit of Disclosure of Property Interest.

(a) As part of the submittal documents, for projects in the separate sewered areas, the owner of the property upon which the project (for which the permit application is made) is located, shall furnish in all instances an Affidavit of Disclosure Property Interest stating the aggregate total area of said property and all other lands contiguous to said property in which the owner holds an interest. The applicability of the detention requirements will be based on the total contiguous area in which an interest is held by the owner.

(b) Where a permit application is made for sanitary sewer and the area serviceable by the sewer is under the control of an individual or a legal entity (directly or indirectly, in part or in full), the area of the project (for the purpose of determining the applicability of the detention requirements) shall be considered to be the total area owned or controlled by the applicant, and detention facilities or provisions shall be made as part of the permit for the total area. If the area serviceable by the sewer is not in its entirety under the control of the applicant, the applicant shall be responsible to provide detention facilities only for that part of the area which is under his control.

c. In all instances where the property which is the subject of a permit is less than five (5) acres (or less than ten acres for residential single family projects) and detention is not provided as part of the permit, the applicant shall furnish to the District, as part of the submittal, an Affidavit of Disclosure of Property Interest with respect to the property, which is the subject of the permit stating that:

( i.) The owner of the property has no interest, nor did he have any interest at any time during the previous two years in any land contiguous to said property, such that the aggregate total area of the property and the contiguous lands exceeds five (5) acres.

(ii.) The owner covenants and agrees that if within two years after the issuance of the permit he acquires any interest in lands contiguous to the property such that the
aggregate area of the property and the contiguous lands exceeds five (5) acres, the owner shall provide for storm water detention for the entire aggregate area.

(iii.) No owner of any lands contiguous to the property has any interest in the property such that the aggregate total area of the property and the contiguous lands exceeds five (5) acres.

For the purpose of this article, the following definitions shall apply:

**Owner:** means record title holder or a beneficiary of a land trust which is the record title holder, and includes singular and plural; if the owner is other than an individual, the term includes beneficiaries, agents, shareholders, officers and directors.

**Ownership:** means holding of record title or any beneficial interest.

**Interest:** means property interest or contractual interest, legal or equitable, directly or indirectly, in part or in full, and includes option to buy. In the case of a shareholder interest, the shareholder shall be deemed to have an interest if he owns or controls 5% or more of the shares.

**Contiguous:** means adjacent to and touching at one point or more; if the lands are separated by an easement or a dedicated right-of-way, it shall be considered contiguous.

(3) **Recording:** Under special and unusual circumstances, where conditions so warrant as solely determined by the District (generally where sewer connections are not proposed), the District may issue the sewer permit without detention being provided for the entire area as part of the submittal and place a special condition on the permit that on-site detention will be provided for each future project within the area regardless of the area of the individual future project, provided that a Notice of Requirements for Storm Water Detention in connection with the permit issued by the District shall be recorded with the Cook County Registrar of Torrens Titles or the Recorder of Deeds of Cook County, as an encumbrance against the entire area.

Before such permit is issued by the District, the applicants shall furnish as part of the submittal, preliminary plans and design showing in adequate detail the manner in which the detention requirements will be satisfied by future projects within the area which is the subject of the permit. If, as part of the preliminary plans and design, it is proposed that the detention requirements will be satisfied by providing on-site detention facilities for individual future projects, the facilities shall be designed such that the minimum size of the area served by such facilities shall not be less than three (3) acres. The acres for which the detention facilities are designed shall be delineated on the preliminary plans. If individual lots having an area of less than three (3) acres each are proposed for development in the future, such lots shall be jointly developed so that the minimum area for which detention facilities are designed and provided shall not be less than three (3) acres. Individual projects developed within the area which is the subject of the permit shall conform to the preliminary plans made a part of the permit with respect to providing detention facilities to satisfy the detention requirements or provide alternate design meeting the intent of the preliminary plans and of the detention requirements as outlined herein.

Where only the name of the permittee appears on the permit application, the permittee shall furnish to the District as part
of the submittal an affidavit that the permittee is aware of the above requirements and will require any person connecting to the sewer which is the subject of the permit to comply with these requirements. Permits issued under the provisions of this article will contain a condition to the effect that the permittee will require any person connecting to the sewer to comply with the requirements contained herein.

6-5. Correction of Existing Deficiencies in Separate Sewered Areas.

It is recognized that the existing separate sanitary sewers within the District service area were designed and intended to receive and convey only domestic and industrial wastewaters together with a limited amount of groundwater infiltration. Stormwater runoff and excessive groundwater infiltration, however, have in many cases been entering and overloading sanitary sewers through deficiencies in the sewer systems such as open pipe joints, cracked or broken pipes, leaking manholes, and illegal connections (i.e., direct or indirect stormwater/groundwater connections to separate sanitary sewers). Sewer overloading arising from such deficiencies may cause health hazards, financial losses, and inconvenience to area residents. This occurs as a consequence of water pollution from the treatment plant bypasses and sewage overflows into streams, and also as a result of backups of sewage into buildings and onto streets and yards. Excessive extraneous clearwater flows also result in additional sewage treatment costs to the public. In order to remedy and prevent these problems, it is the intent of this Article to set forth a regionally applied program for the rehabilitation and correction of sanitary sewer systems, and for the establishment of adequate long-term sewer management programs by owners of separate sanitary sewers tributary to the District sewage treatment facilities.

a. Scope and Goals. The purpose of this program is the removal of groundwater infiltration and stormwater inflow (I/I) from separate sanitary sewer systems in order to meet the following goals:

(1) Prevention of water pollution.

(2) Elimination of basement sewage backups and other adverse sewer surcharging conditions that cause health hazards and financial losses.

b. Applicability. This Article applies to all tributary communities which own and/or operate a sanitary sewer system which discharges directly to the District system. As used herein, the term "tributary communities" shall include municipalities, townships, private utility companies, school and sanitary districts, and any other permittee or entity. Tributary communities which have been notified by the District as being in compliance with the District I/I removal requirements need not undertake another sewer rehabilitation program and are subject only to the requirement for the long-term maintenance and operation program as specified in Item h, below.

c. Compliance Criteria.

(1) Each tributary community shall undertake a program for removal of excessive I/I which meets all of the following criteria.

(a) Average daily wet weather flow in the tributary community’s entire sanitary sewer system shall not exceed 150 gallons per capita per day, or optionally, documented water usage plus allowable
infiltration of 500 gallons per inch diameter-mile per day.

(b) Elimination of basement sewer backups and other adverse sewer surcharging conditions that cause health hazards and financial losses.

(2) Each tributary community has the option of undertaking the alternative I/I Corrective Action Program (ICAP), which meets all of the following criteria:

(a) The ICAP program shall be conducted pursuant to USEPA regulations/guidance (40 CFR 35.2120, Construction Grants 1985). All I/I that is determined to be excessive by an acceptable cost effectiveness analysis performed by the tributary community shall be eliminated. (Also, see item g, "Basin-by-Basin Analysis" below.)

(b) Completion of such additional work as may be required as a result of a Sewer System Compliance Conference provided for in Item g(2), below. The additional work may be required even after the elimination of the cost effective I/I. The cumulative effect on the basin of the remaining I/I from some of the tributary communities may continue to cause problems such as: raw sewage bypasses to local waterways, inadequate treatment at plants due to overloading, surcharging, and basement sewage backups. In some cases, one community’s I/I may cause adverse effects on another community’s ability to meet the goals set forth in this ordinance.

(c) In order to participate in the ICAP option, tributary communities must submit a formal resolution electing the ICAP option on or before March 1, 1986.

d. Private Sources of I/I. A program for the correction of private sources of I/I, which is compatible with the purpose of this Article and meeting the compliance criteria, shall be initiated under either program option selected in Item c above. Private sources are defined as cracked, broken or open-jointed building service laterals; and illegal connections such as, roof downspouts, storm sump pumps, area way drains, window well drains, exterior stairwell drains, patio, yard and driveway drains, and footing/foundation drains connected to the sanitary sewer system.

e. Semi-annual Reports. The District shall prepare and distribute semi-annual status reports regarding progress by the communities on their I/I identification and removal efforts. In order to complete this report, each tributary community shall submit to the District semi-annual reports of its progress and plans relative to its I/I identification and removal efforts. The first semi-annual report shall be submitted to District on or before July 1, 1986. Reports must be submitted regardless of the degree of progress made during the reporting period.

f. Compliance Schedule. Each tributary community shall complete a series of work items in accordance with the time frames set forth below. The work items and schedule herein apply to both options set forth in Item C above unless otherwise indicated.

(1) Sewer System Evaluation.

(a) To the extent not already completed, each tributary community pursuing the District Compliance Criteria in Item C1, shall undertake a study and evaluation of its sewer system, and submit a completed evaluation study report to the
(2) Design. Plans and specifications for the public sector corrective work necessary to eliminate the deficiencies identified in the above study shall be submitted to District as soon as possible, but no later than January 1, 1988. The plans for corrective work must include a timely and reasonable implementation schedule and appropriate funding arrangements. All designs, schedules and funding arrangements will be subject to review and approval by the District and, if necessary, by the IEPA.

(3) Corrective Actions. Corrective work necessary to eliminate the deficiencies that have been identified shall be started as soon as possible, but no later than July 1, 1988. All corrective work must be completed in accordance with a reasonable schedule which establishes a final completion date and incorporates the private sector l/l removal program plan and long-term operation and maintenance program. The schedule will be based upon the nature of the corrective work to be performed and the funding mechanism to be utilized. The schedule will be formally codified in an enforceable manner.

(4) Private Sector. A program plan for the correction of private sector l/l sources shall be developed as soon as possible but no later than January 1, 1988.

g. Basin-by-Basin Analysis. Analysis of each sewage treatment basin shall be performed by the District as follows:

(1) After January 1, 1987, the District will conduct a basin-by-basin analysis of the potential, cumulative effect on the corrective actions, identified by the completed SSES as indicated in Item f(1) (a) and (b), above. This analysis will
utilize I/I removal projections to assess the impact on transport and treatment capacities and may identify continuing concerns relative to the goals in Item (a) above that will necessitate consideration of further corrective actions for particular basins or sub-basins which may apply to those tributary communities undertaking the ICAP (cost effectiveness) option.

(2) After July 1, 1988, the District will initiate action to address any continuing concerns identified in Item g (1), above. A 'Sewer System Compliance Conference' shall be convened which includes representatives of all the tributary communities identified as causing, contributing to, or being affected by the continuing concerns within each applicable basin. The IEPA and USEPA will also be invited.

Each conference will discuss the nature of the continuing concerns and formulate additional corrective actions and mitigation measures which may be required of tributary communities undertaking the ICAP cost effectiveness option. As soon as possible, but no later than one year after convening a conference, a final compliance program and schedule will be adopted by the District which will be applicable to the appropriate tributary communities after completion of the corrective work in Item f, above.

h. Long-Term Operation and Maintenance Program. All tributary communities (including communities presently in compliance) must establish a long-term operation and maintenance program with the aim of preventing entry of I/I into their sewer systems.

i. Advisory Technical Panel. An ICAP Technical Panel will be established by the District by January 1, 1986. This Panel will act in an advisory capacity and will be composed of appropriate elected officials and other representatives from the tributary communities, and the District. The Panel will be given the following duties and assignments:

(1) Develop, by March 1, 1986, recommendations regarding the components used to compute transport and treatment cost.

(2) Review and comment upon by March 1, 1986, flow metering criteria used to evaluate I/I.

(3) Develop by January 1, 1987 guidelines for the long-term operation and maintenance of sanitary sewer systems in the District service area.

(4) Review and comment upon the basin analyses prepared pursuant to Item g, above.

j. Evaluation of Impacts from Residual Flow. The District will plan for and initiate a special study of the impacts of "residual" I/I remaining in the separate sewer systems. This study will begin in the spring of 1987 and continue for the period of time necessary to adequately characterize the impacts in areas where corrective actions have been implemented. The results of this special study may be utilized for the Sewer System Compliance Conferences convened pursuant to Item g(2).
Article 7. PROCEDURES FOR SUBMITTALS.

7-1. Documents to be submitted. The applicant shall submit the documents listed below and prepared as indicated.

a. Permit Form. Submit the permit form in quadruplicate with all items complete. Provide all the signatures and seals necessary by the appropriate parties. Furnish all the information required or indicate non-applicability. Do not leave any blank spaces. Except for signatures and seals, all the information shall be typed.

b. Overall Plan. The plan shall clearly show and name all streets, buildings, sanitary and storm sewers, stub locations and method of capping, manholes, catch basins, curb inlets, watermains, surface water drainage and any other pertinent features or information. All manholes shall be clearly shown for all sanitary and storm sewers. Indicate the length and slope of all runs and show inverts at both ends. When the set of drawings submitted contains five (5) or more sheets, the overall plan shall be cross-referenced. A typical overall plan will be furnished upon request.

c. Plot Plan. When the project consists of one building, a plot plan on 8-1/2" x 11" will be accepted, provided the purpose and clarity of the drawing are not sacrificed. Otherwise use a standard size sheet, preferably 11" x 17" or 24" x 36". Give the location of the building service sewer with the length and slope. Give invert elevations at both ends, and any manhole rim elevations. Provide all of the other information described in Article 7-1b above. A typical plot plan will be furnished upon request.

d. Location Map. The location map shall be made to a scale compatible with clarity and purpose, but not smaller than 1/2" = 1000 ft. The site of the project shall be clearly identified. The map shall encompass an area surrounding the project site and extending approximately one mile in each direction. The map shall show the main streets or highways and/or section lines, labeled by name or number, so as to make them easily identifiable. Show the nearest interceptor and the nearest natural stream. Trace the entire route of the sanitary sewer to the point of connection to the District interceptor and label ownership of the sanitary sewer systems. Trace the entire route of the storm sewer from the site through existing storm sewer systems or drainage ditches to the point of discharge into the receiving stream. The location map will be waived if the municipality in which the project is located maintains an up-to-date sewer atlas, showing all the storm and sanitary sewer systems, and a copy of said atlas is furnished to the District by March 1 of each year. A typical location map will be furnished upon request.

e. Construction Details and Other Data. Submit drawings of construction details of special appurtenances, structures, connections and other relevant details. Submit additional information, statements and design data as may be required for specific types of projects.

7-2. Consultation with the District. The design engineer is encouraged to consult with the District in all instances to clarify any questions that he may have in connection with the permit and to insure adequacy and conformance of the drawings to the applicable requirements. In all cases which involve the design of treatment facilities, direct connection to the
District interceptors or facilities, and any project involving industrial waste, the design engineer should confer with the District prior to the preparation of the final plans. The transmittal letter submitting the plans must bear reference to prior consultations, if any.

7-3. Plans. Four copies of the plans no larger in size than 24” x 36”, shall be submitted with the permit application. All plans shall show a "North" arrow, and shall be oriented so that the 'North' arrow points upward or to the right hand side of the drawing. When the set of drawings submitted contains five or more sheets, an index shall be provided on the title sheet of the set, if any, or on the over-all plan. Each sheet shall be designated by a proper title. The index sheet shall bear a date and shall show the name of the project and the name, address and telephone number of the design engineer. When the set of plans contains less than five sheets, and no index is provided, each sheet shall be identified independently and shall show the name of the project, the date, the sheet title, and the name, address and telephone number of the design engineer.

7-4. Project and Plan Titles. The engineer is urged to select precise and identifiable titles that would reveal or describe the nature of the project or the work encompassed on the sheet. A project title like "Three Story Building" or a sheet title like "Sanitary Sewer," is vague and unidentifiable.

7-5. Specifications. When specifications are prepared for the project, submit two copies of the specifications covering or relating to the sewer work. The specifications shall indicate the name of the project, and the name and address of the design engineer and shall contain a table of contents.

7-6. Seals and Signatures. The seal and signature referred to shall be those of the Professional Engineer responsible for the design. The seal shall be affixed on the title sheet and table of contents of the specifications, on the index sheet of the plans and on the location map. Where no index sheet is provided, the seal and signature shall be affixed on each sheet.

7-7. The Illinois Professional Engineering Act. The affixing of a Registered Professional Engineer's seal to any work which has not been done by, or under the personal supervision of, that Professional Engineer, is a violation of Section 28 of The Illinois Professional Engineering Act.

7-8. Connection to Private Sewers. When the proposed sewer connects to a private sewer, submit the written approval of the owner of the private sewer to which the connection is proposed, and a copy of the maintenance agreement.

Article 8. RESIDENTIAL AND NON-RESIDENTIAL PROJECTS.

8-1. Trunks and Laterals. When a permit application is made for the construction of trunk and/or lateral sewers to serve a future residential or non-residential project, submit the following:

a. Standard contract plans, profiles and specifications of the proposed sanitary sewer trunk and/or laterals.

b. Permit form, over-all plan, location map, and other data as may be required. (Article 7-1)

If the project includes construction of building service sewers, submit additional information as required for each specific project listed below. The requirements below may be incorporated in the plans described above.
**8-2. Residential Multi-Family Building.**
When the project consists of, or includes, a building service sewer for a residential building containing 25 or more dwelling units, submit the following:

a. Permit form, plot plan, location map, construction details and other data as may be required. (Article 7-1)

b. Method of connection to sewer main. (See Article 4-4 and 4-5)

---

**8-3. Commercial Building.**
a. General. When the project consists of, or includes a building service sewer for a commercial building, submit the following:

1. Permit form, plot plan, location map, construction details, and other relevant data as may be required. (Article 7-1)

2. Method of connection to sewer main. (See Article 4-4 and 4-5)

3. Provide an inspection manhole on the building service sewer. (See Article 4-6)

b. Objectionable Wastes. When the use of the building is such that it will produce objectionable or heavily-loaded discharges, (e.g. auto service garage), include the additional items below in the design: 1. Provide a triple basin or similar device and submit detail or manufacturer's catalog number of same. All non-domestic flow must go through the basin before entering the sewer main.

c. Less Objectionable Wastes. When the use of the building is such that less objectionable or heavily loaded discharges (e.g. from restaurants) are produced, submit the additional items below:

---

**8-4. Industrial Building.**
a. General. When the project consists of, or includes, a building service sewer for an industrial building, submit the following:

1. Permit form, plot plan, location map, construction details, and other relevant data as may be required. (Article 7-1)

2. Method of connection to sewer main. (See Article 4-4 and 4-5.)

3. Provide an inspection manhole on the building service sewer. (Article 4-6)

b. Industrial Waste Potential. When the use of the building does not involve processes or operations that will produce industrial wastes, (e.g. warehouse), submit the additional items below:

1. Provide a statement on the owner's stationery describing the use of the building and certifying that no industrial waste will be allowed to discharge into the sewer system.

c. Industrial Waste Present. When the use of the building involves processes or operations that will produce industrial wastes (e.g. pickling plant), submit the additional items below:
1. A statement on the owner's stationery describing the use of the building and the processes used.

2. Indicate quantity, character and quality of industrial wastes produced. Indicate 5-day BOD, pH; suspended solids, etc. (See MWRD Sewer User Form)

3. Indicate type and location of treatment facilities proposed and the expected quality of the effluent. (See also Article 8-5)

4. Indicate method of controlling the quantity of discharge into the public sewer and times of discharge.

5. Indicate other wastes created but not discharged into the sewer and the method of disposal of same.

8-5. Treatment Facilities

Treatment facilities under this article: include by description and not enumeration, treatment processes, treatment plants, oxidation ponds and similar facilities. When the project involves, or consists of, treatment facilities submit the items indicated below. In all cases, the design engineer should consult with the District before the final design is completed:

   a. Permit form, location map and other relevant data as may be required. (See Article 7-1)
   b. Contract drawings.
   c. Design criteria and calculations.
   d. Required maintenance bond.

8-6. Lift Stations. Gravity sewers are by far preferable to Lift Stations and force mains as a means for conveying sewage. In general, lift stations are not desirable nor recommended and should be resorted to only after all other engineering studies for alternatives have been exhausted. Force mains should preferably be designed to discharge into gravity sewers. Discharge of force mains into another lift station is discouraged and is considered to be potentially detrimental to the health and welfare of the public served. Where a force main or a lift system is designed to discharge into another lift station a detailed report is required to justify such design. The report should include other methods considered, and the recommendation for the design must be supported by engineering considerations. Written approval of the Owner of the receiving lift station and a copy of the maintenance and operation agreement between the parties must be furnished. The agreement shall also clearly specify the responsibilities of the parties in case of failure of either lift station.

Where the project for which a permit application is made consists of, or involves a lift station and force main or lift system, submit the following:

   a. Permit form, location map and other relevant data as may be required. (See Article 7-1)
   b. Contract drawings.
   c. Plan and profile of force main.
   d. Design calculations and alternate power available. (Complete special District form for this purpose.)
   e. Map of area to be served, clearly delineated.
SECTION IV - CONSTRUCTION, TESTING AND APPROVAL

Article 9. CONSTRUCTION AND INSPECTION

9-1. Advance Notice. Prior to commencement of sewer construction under the Permit, the Permittee shall give, or cause to be given, to the District, an advance notice of at least two (2) working days.

9-2. Conformance to Plans and Specifications. All construction shall be in accordance with the plans and specifications made part of the Permit. The permit together with a set of the plans and specifications for the project shall be kept on the job site at all times during construction, until final inspection and approval by the District.

9-3. Construction Inspection. All sewer construction shall be inspected and approved by a Registered Professional Engineer acting in behalf of the Permittee or the Owner of the project, or by the duly authorized representative of the Professional Engineer.

No sewer trenches shall be backfilled except as authorized by the Inspection Engineer after having inspected and approved the sewer installation. The Inspection Engineer shall signify his approval and authorization for backfilling on the Inspection Report. The Inspection Report shall be on the job site at all times, and shall bear the signature of the Engineer, identifying those portions of the sewer inspected and approved by him. The Inspection Report shall be made available for review by the District representative.

9-4. Record Drawings. Within sixty (60) days after final inspection and approval by the District, the Permittee shall furnish or cause to be furnished to the District, a set of record drawings. The pipe and joint materials and applicable ASTM Specifications shall be indicated on the drawings.

Article 10. TESTING AND APPROVAL.

10.1. Requirement for Testing. All sewers constructed under permits issued by the District shall be subject to inspection, testing and approval by the District to insure compliance with the applicable requirements. All testing shall be made, or caused to be made, by the Permittee or Co-Permittee at no cost to the District and in the presence of the District Representative.

a. Testing procedures for polyvinyl chloride (PVC) pipe shall include the following:

1. The project engineer shall randomly select portions of the project to be deflection tested. Such portions shall consist of the manhole intervals for the initial sewer construction up to 1,200 linear feet and not less than 10% of the remainder of the sewer project.

2. The 5% deflection test for pipe sizes six (6) to fifteen (15) inches in diameter is to be run using a nine-arm mandrel having a diameter equal to 95% of the base diameter of the pipe as established in ASTM D-3034. For pipe sizes eighteen (18) to twenty-seven (27) inches diameter, the nine-arm mandrel size shall be 95% of the inside diameter and wall thickness dimensions shown in Table 1 of ASTM F-679, latest issue. The test shall be performed without mechanical pulling devices.

3. The individual lines to be tested shall be so tested no sooner than 30 days after they have been installed.
4. Wherever possible and practical, the testing shall initiate at the downstream lines and proceed towards the upstream lines.

5. No pipe shall exceed a deflection of 5%.

6. In the event that the deflection exceeds the 5% limit in 10% or more of the manhole intervals tested, the total sewer project shall be tested.

7. Where deflection is found to be in excess of 5% of the original pipe diameter, the contractor shall excavate to the point of excess deflection and carefully compact around the point where excess deflection was found. The line shall then be retested for deflection. If, after the second test, the deflected pipe fails to return to the original size (inside diameter) the line shall be replaced.

10-2. Request for Final Inspection. Upon completion of construction, the Permittee shall submit to the District a properly executed request for final inspection and approval on the form prescribed by the District. No sewer shall be put in service until it has been approved by the District, and until all the conditions of the permit have been satisfactorily met.

10-3. Construction Without Advance Notice. Construction without advance notice to the District, as provided in Article 9-1, shall be considered prima facie evidence that construction may not have been done in accordance with the applicable requirements. In addition to any other requirements, that portion of the newer construction prior to the notification of the District shall be exposed by the owner, at his expense in at least one location between every two manholes, two terminal points or as directed by the District for visual inspection by the District to insure compliance with applicable requirements as to materials and workmanship.

10-4. Maximum Allowable Infiltration. It is the intent of the District that all sewers within its territorial boundaries shall be constructed of sound material and shall be properly jointed so that the amount of ground water infiltration into the sewer shall be kept at a minimum. The maximum allowable rate of infiltration or exfiltration shall not exceed 100 gallons per twenty-four (24) hours per mile per inch-diameter of the sewer pipe, for any section of the system and at any time during its service life.