2021

WASTEWATER

Public Works Department

City of Shoreline

17500 Midvale Avenue North

Shoreline, WA 98133

CONTENTS

APPENDICES

FOREWORD

This Division 4 provides wastewater engineering development standards for the City of Shoreline (City).

This document should be used in conjunction with the 2021 Engineering Development Manual (EDM). Division 4 Wastewater is currently published as a separate file on the City's Engineering Standards webpage and will be incorporated into the 2022 EDM when it is published in March 2022.

https://www.shorelinewa.gov/government/departments/public-works/engineering-standards

DIVISION 4 – WASTEWATER

Chapter 1. Public Sewer, Use, and Connections

1.1. Public Sewer

Any structure to which water is provided within the City shall connect to the City's sewer system if the property has been assessed by the City and is within 300 feet of a public sewer.

1.2. Connection Charge

The City shall notify affected property owners when the public sewer has been constructed, tested, and is ready for side sewer connection. Said notification shall include the cost to connect and other related financial information.

1.3. Connection of Non-Assessed Property

The owner of property that has not been subject to special assessments for sewers by the City may connect structures on that property to the public sewer of the City or any other sewer where the City has an agreement with another agency and obtain sewage disposal service by entering into the necessary agreements and paying the necessary fees.

1.4. Connection of All Plumbing Outlets

All plumbing outlets used as either a receptacle or conductor of sanitary sewage from the structure shall connect to the sanitary sewer.

1.5. Prohibited Connections and Wastes

The following connections to the sanitary sewer system are prohibited: gutter drains, down spouts, storm water collection systems, cesspools, septic tank privy vaults, cisterns, footing drains or any other connection determined by the Director of Public Works (Director) to be principally a storm drain or which is principally a conduit for stormwater.

In accordance with Shoreline Municipal Code (SMC) 13.05.140(B), the following materials shall not be discharged into the sanitary sewer:

A. High Temperature Wastes:
    a. Any liquid or vapor having a temperature higher than 150 degrees Fahrenheit.

B. Obstructive Wastes:
    a. Any ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, manure, or any other solid or viscous substance capable of causing obstructions to the flow in sewers or causing other interference with the proper operation of the City sewage system.

C. Inflammable or Explosive Substances:
    a. Any gasoline, oils, paints, benzine, naphtha, fuel oil, other flammable or explosive liquids; solids, gases, or any waters or wastes containing gasoline,

benzine, naphtha, fuel oil, lubricating oil, or any other matter which is inflammable or explosive or any matter that is capable of becoming inflammable or explosive upon introduction into the City's sewage system.

D. Toxic or Poisonous Substances:
    a. Any waters or wastes containing a toxic or poisonous substance in sufficient quantity to injure or interfere with any sewage treatment process, which constitutes a hazard to humans or animals, or creates a hazard in the receiving waters of the City sewage system.

E. PH Limitations:
    a. Any waters or wastes having a pH lower than 5.5 or higher than 9.0 or having any other corrosive property capable of causing damage or hazard to structures, equipment, and personnel of the City and treating agencies.

F. Suspended Solids:
    a. Any waters or wastes containing suspended solids of such character and quantity that unusual attention or expense is required to handle such material at the sewage treatment plant or is in excess of 350 milligrams per liter (mg/L).

G. Noxious Substances:
    a. Any noxious or malodorous gas or substance capable of creating a public nuisance, including the contents of septic tanks and cesspools, without the prior written consent of the City.

H. Medical Wastes:
    a. Any medical wastes including but not limited to hypodermic syringes and needles.

I. Paper and Plastic Products:
    a. Any paper and plastic products such as cups, dishes, napkins, and milk containers.

J. Fat, Oil, and Grease (FOG):
    a. Any grease (animal or vegetable), oils, or materials containing animal or vegetable grease or oil of any nature in excess of 100 mg/L.

K. Biochemical Oxygen Demand (BOD):
    a. Any matter containing a 5-day BOD in excess of 300 mg/L.

L. Other:
    a. Any waste which, in the opinion of the Director, may harm facilities of the City or adversely affect the sewage treatment process.

1.6. Oil / Water and Sand Interceptors / Separators

In accordance with SMC 13.05.140, property owners identified in Section 1.6(A) shall be required to install, at the owner's expense, oil/water and sand interceptors/separators when, in the opinion of the City, they are necessary for the proper handling of liquid wastes containing FOG in excessive amounts or any flammable wastes, sand, and other harmful ingredients.

M. Businesses Affected:
    a. All commercial and retail food preparation operations, self-service car washes, automobile service stations, steam cleaning facilities, and any other

businesses which release FOG, chemicals, sand, or metals shall comply with this section before a side sewer permit will be issued.

1.7. Fat, Oil, and Grease (FOG)

In accordance with SMC 13.05.145, all food processing, sales and service establishments generating FOG shall have an installed grease interceptor and FOG Control Plan approved by the City.

A. Grease Interceptor: The requirements for grease interceptors are as follows:

a) Grease interceptor sizing and installation shall conform to the requirements contained in the current edition of the Uniform Plumbing Code (UPC) or other criteria as determined on a case-by-case basis based on review of relevant information. Supporting sizing calculations shall be submitted to the City.

b) The grease interceptor will have a minimum of two (2) compartments with fittings designed for grease retention.

c) Grease interceptors shall be installed at a location where they are easily accessible for sample collection, inspection, and cleaning and removal of retained grease. The grease interceptor may not be installed in any part of the building, unless approved by the City.

d) Grease interceptors shall be located in the food service establishment's lateral line between all fixtures which may introduce grease into the wastewater system and the connection to the wastewater system. Such fixtures shall include but not be limited to sinks, dishwashers, floor drains for food preparation and storage areas, mop sinks, and any other fixture which is determined to be a potential source of grease.

e) Grease interceptors must be directly vented. Grease interceptor shall not be connected to building vents.

f) Access manholes, with a minimum diameter of 24 inches, shall be provided over each chamber and sanitary tee. The access manholes shall extend at least to finished grade and be designed to prevent water inflow or infiltration. The manholes shall also have readily removable covers to facilitate inspection, cleaning and removal of retained grease and sample collection. Riser maximum height will not exceed 24 inches.

g) Sanitary wastes (restroom wastes) cannot be introduced into the grease interceptor.

N. FOG Control Plan: It is the responsibility of the food processing, sales and service establishment to prepare written instructions pertaining to specific business needs for proper handling and disposal of FOG. Written plans should include, at a minimum, the following:

a. Staff person in charge of the program.
b. Identification of grease and fat sources.
c. Employee training manual with scheduled new employee training and continuous education program.
d. Disposal and recycling programs.
e. List all required functions related to FOG housekeeping practices.
f. Provide visual signs at specific sites for related tasks required.
g. Contact names and phone numbers for emergencies.

h. Documentation of actions by date, including training sign-off sheets, maintenance, cleaning and incident reports. All such records shall be made available to the City upon request.

C. Penalties: When an existing food processing, sales and service establishment is found not to be in compliance, the City has the authority to assess penalties to the business and the business will be liable for any damages resulting from non-compliance.

Chapter 2. Permits, Charges, and Fees

2.1. Application and Issuance

Prior to connection of any structure to any sanitary sewer system or the making of any repairs, alterations, or additions, an application for a side sewer permit shall be filed with the City. The application shall be signed by the owner, owner's authorized agent, or approved licensed side sewer contractor.

The owner, his/her authorized agent, or contractor shall furnish a site plot plan showing the size and location of structures on the property, the purpose or use of the structure, the owner's name, mailing address, legal description of the property to be served and/or other information requested by the City. The proposed side sewer from the public sewer to the structure shall be shown on the plan. Upon approval of the application, the City shall issue a side sewer permit to the applicant. The permit shall authorize the applicant to proceed to connect to the public sewer system in accordance with the permit. If the applicant proceeds in any manner other than as authorized, the City may require the applicant to correct any work that is not in accordance with the permit, or may require the owner to expose any work which has been done to allow inspection. Any work done without a required inspection will be deemed to have been done incorrectly.

2.2. Installation

A property owner may install a side sewer on the property provided the owner complies with these standards.

2.3. Unauthorized Work

No repairs to or installation of a sewer shall be performed on any private or side sewer without a permit issued by the City. (See 57.08.180 Revised Code of Washington (RCW).)

2.4. Right-of-Way Permit

A right-of-way permit is required for all work performed on public right-of-way.

2.5. Other Permits/Notifications Required

The issuance of a side sewer permit by the City shall not relieve the permit holder from the responsibility of obtaining any other permits or licenses which may be required by the City, county, state or other agency. The permit holder shall contact the Utilities Underground Location Center for the location of any underground facilities 48-hours prior to starting excavation.

2.6. Failure to Comply With Permit Provisions

If any work done under a side sewer permit is not in accordance with these standards and if the permit holder doing the work fails and/or refuses to properly construct and complete such work, notice of such failure or refusal shall be given to the permit holder, contractor, owner, or occupant in writing. The City may cause the work to be stopped if the work, in the opinion of the City constitutes a violation of the permit or a hazard to public safety.

2.7. Denial of Permit

The City shall have the right to refuse to issue a permit to any person or contractor when documented doubt indicates that such person or licensed contractor may be unable to comply with these standards.

2.8. Permit Fees

Prior to issuance of any permit, all fees shall be paid to the City per SMC Chapter 3.01 Fee Schedules.

2.9. Connection Charges

A. General Facilities Charge:

All customers who shall have a change of use of property, connect to, or establish a new sanitary sewer service using City's sanitary sewer facilities shall pay a general facilities charge established by the City prior to making connection to the City's sewer system. The purpose of the charge is to recover costs already paid by present and past customers for building sewage collection capacity to serve newly connected customers and to insure that all customers pay their share of the cost of capital improvements to provide service.

B. Treatment Facilities Charge:

In addition to the City's General Facilities Charge, all customers who shall have a change of use of property or connect or establish a new sanitary sewer service connection shall be subject to a Treatment Facilities Charge. The purpose of this charge is to recover costs already paid by present and past customers for building and providing the sewage treatment capacity necessary to serve newly connected customers.

a. King County Wastewater Treatment Facility Charge:

King County collects a charge for all new or change of use connections which serve into the King County Wastewater Treatment Plant Facility. King County Capacity Charge forms are completed at the time of permit issuance and forwarded to King County. King County will contact the property owner directly for payment.

b. City of Edmonds Wastewater Treatment Facility Charge:

The City of Shoreline collects a Treatment Facility Charge that is retained to offset capital costs incurred from the Edmonds Treatment Plant. The City of Edmonds charges the City for actual capital costs at a rate of 9.488-percent of the total cost of the project.

Chapter 3. Side Sewer Requirements

3.1. General Provisions

These standards are only for gravity lines and are not intended for pressure mains. Pressure mains shall meet American Society for Testing Materials (ASTM) specifications and/or specifications established by the City's consulting engineers for the project.

Connection shall be made at the point designated by the City and all plumbing outlets shall be connected to the sanitary sewer.

Build through requirements may apply to serve upstream property.

3.2. Grade and Depth

All side sewers shall be laid on not less than a two percent grade (two feet per 100 feet), nor more than 200 percent (two feet vertical; one foot horizontal) grade. Side sewers shall not be laid within 30 inches from any foundation wall of any building and if there is no foundation wall, shall not be laid within 30 inches from the outer lines of any footings, pilings, or building supports.

Minimum cover shall be:

A. Not less than 60 inches at the curb line;
B. Not less than 36 inches at the property line;
C. Not less than 18 inches on private property;
D. If minimum cover on private property cannot be attained, Polyvinyl Chloride (PVC) C900 or ductile iron pipe must be installed;
E. If minimum cover in the right-of-way cannot be attained, PVC C900 or ductile iron shall be installed.

3.3. Alignment, Bedding, and Backfill

The side sewer shall connect to the main with a 90-degree connection and be laid at uniform grade and in straight alignment to the property line and thereafter. Line and grade shall be uniform throughout the installation, except as allowed by the inspector. Changes in direction shall be made only with curved pipe or with no greater than 45-degree bends. The connection to the structure plumbing outlet shall be made with 45-degree bends or a combination of bends. All pipe shall be laid on a four (4) inch granular base of 5/8-inch minus crushed rock, pea gravel, sand, or a combination thereof. Backfill around the pipe and to a point four (4) inches above it shall be the same material.

3.4. Material Specifications

The following material specifications are approved for use in the City for new construction:

A. Ductile iron pipe conforming to American Water Works Association (AWWA) specification C151 with cement and mortar lining conforming to AWWA specification C104 with joints and fittings conforming to AWWA specifications Cl10 or C153.

B. High-Density Polyethylene Pipe (HDPE) conforming to ASTM F714, D3350. Installed in conformance with ASTM F585. Joined by thermal butt fusion per manufactures recommendation and ASTM D2657.

C. PVC pipe conforming to ASTM D3034, SDR35 or F789 with rubber gasket joints conforming to ASTM 3212 using a restrained rubber gasket conforming to ASTM 477.

D. PVC pressure pipe conforming to AWWA C900, C905 or C909 with an outside diameter equal to ductile iron pipe and with gasket bell ends and a minimum wall thickness shall be equal to or greater than dimension ratio (DR) of 18 (150 psi) unless otherwise specified. Joints shall conform to ASTM D3139 using a rubber gasket conforming to ASTM F477.

3.5. Sewer Pipe Size

A side sewer in the right-of-way or public easement shall be a minimum six (6) inches in diameter unless another size is approved in writing by the Director or designee.

A four (4)-inch side sewer shall be required for any detached single-family residence.

A maximum of four (4) detached single family residences may be connected to a common side sewer provided the side sewer is not less than six (6) inches in diameter. A side sewer easement/agreement is required. (See Section 9.5, Easements)

A maximum of eight (8) attached single family residences (townhouses) may be connected to a common side sewer provided the side sewer is not less than six (6) inches in diameter. A side sewer easement/agreement is required. (See Section 9.5, Easements).

Apartment houses containing up to 29 apartments must have a minimum six (6)-inch side sewer and six (6)-inch fittings used from and including the junction.

Side sewer requirements for office buildings, apartments with greater than 29 units, and other commercial buildings, will be determined on an individual basis.

3.6. Side Sewers Longer than 150 feet

No six (6) inch side sewer shall be more than 150 feet in length, except in such cases as may be approved in writing by the Director or designee.

The Director may require any side sewer more than one hundred fifty (150) feet in length to be at least eight (8) inches in diameter with manholes on each end and at intervals of not more than four hundred (400) feet. Those lines must be installed with both vertical and horizontal alignment.

3.7. Trailers, Mobile Homes and Auxiliary Dwelling Units

A. Trailers and Mobile Homes:
    a. Trailers must have a flush PVC connection accessible with a screw-down cap. Mobile homes situated on an individual single-family lot shall meet the same side sewer requirements as single-family structures.

B. Auxiliary Dwelling Unit:
    a. A four (4)-inch side sewer from an auxiliary dwelling unit will be permitted to connect to a four (4)-inch side sewer serving an existing single-family structure. Only one (1) auxiliary dwelling unit per lot will be allowed to connect to an existing four (4)-inch side sewer. If the lot is of such size that it can be divided, then Section 3.5 Sewer Pipe Size will apply. Under all situations the auxiliary dwelling unit is subject to all permits, fees, connection charges, notifications, and requirements of a single-family residence.

3.8. Clean-Out

A cleanout is required:

A. When a side sewer in the right-of-way or public easement crosses onto private property. The cleanout shall be on private property within five (5) feet of the right-of-way or public easement and in an easement to allow City access. The cleanout shall have a locking metal lid;
B. Whenever more than a 45-degree bend is used and whenever two consecutive one-eighth (1/8) bends are installed;
C. Immediately outside a house or structure;
D. Every 100 feet for side sewers which are in excess of 100 feet in length;
E. At the end of a line with multiple connections;
F. Additional clean outs may be required by the City.

All clean-outs within paved areas must be brought to surface. The cleanout shall have a locking metal lid.

3.9. Sewer and Water Line Separation

In general, parallel construction requires a minimum horizontal separation of four (4) feet with the sewer line constructed a minimum vertical distance of one and one-half (1.5) feet below the water line on a separate shelf. Perpendicular crossing requires the sewer line be one and one-half (1.5) feet below the water line. Any exceptions shall comply with most current edition of the Washington State Department of Ecology *Criteria for Sewage Works Design*. In any case, construction shall comply with the local water provider's regulations.

3.10. Pipe Casing Material

A. One quarter (1/4)-inch steel casing pipe or ductile iron class 52. In special cases as approved by the City, C-900 DR 14 PVC pipe may be allowed. Casing spacers are required. A minimum of three (3) sets of spacers are required per 20 feet of pipe.

Spacers shall be as manufactured by Uni-Flange®, Calpico Inc. or approved equal. No more than one (1) inch of clearance is allowed per set of spacers or insulators.

B. Refer to Standard Plan 616 Split Casing Detail Sewer Pipe Encasement Requirements.

C. The joints of the transmission pipe within the casing pipe shall be restrained. Casing Spacers shall be manufactured by UniFlange®, or if using Calpico Inc. insulators; the pipe joints shall be restrained with a restraint system approved by the City. Restrained joints shall be required on the transmission line one pipe length past either end of the casing pipe. Additional restraints may be required by the City. Trenchless construction methods may be used if appropriate.

Chapter 4. Trailer/RV Disposal for Single-Family Residences

Installation of a trailer sanitary disposal system requires a side sewer permit and inspection. The installation shall include a screw-on cap and must be approved by the City.

Chapter 5. Connection to Public Sewers

A. Stub or Tee Location:
    a. Stub and tee locations in most cases, are available at the City office. However, this information has not been verified by City personnel. Therefore, neither the City nor its personnel may be responsible for the accuracy of the information supplied. Rather, the contractor shall be responsible for verifying stub and tee locations.

B. Saddles:
    a. Prefabricated saddles approved by the City shall be used for any connection into the public sewer unless otherwise specified by the City. No connection will take place unless an authorized City representative is present and their presence is noted on the permit at that time. The sewer contractor responsible for coring a mainline must be licensed and bonded with the City. All coring equipment will be strapped onto the main during the cutting process and must be centered on the pipe at no more than a 45-degree slope. All cores to the main will be a minimum of six (6) inches in diameter.

C. Manholes:
    a. A manhole may be required for connection to the Public Sewer at the direction of the Director or designee.

D. Sewer Main Replacement:
    a. If, in the opinion of the Director or designee, the integrity of the Public Sewer main is threatened by a new connection to the main, the threatened section of main shall be replaced at the time of the connection.

E. Payment for Connections:
    a. The City shall require a payment for any connection whether there is an existing wye, tee or new connection is required.

5.1. Excavation

No person shall leave unguarded any excavation made in connection with construction or repair of any side sewer or private drain within four (4) feet of any public place.

5.2. Non-Conforming Installations

A. Non-conforming installation or variance from City standards shall not be permitted without the advance written express approval of the Director or designee. Any variance permitted shall be subject to the person requesting the variance executing and recording the necessary releases or documents required under Chapter 9, Special Releases, Agreements and Documents.

B. Pump for Single-Family Residence:
    a. If a property cannot serve by gravity to a City main, a request may be made to the City for the owner to install a pump.
    b. The City may allow pump installation under the following conditions:
        i. The City will not be responsible nor liable for the operation, maintenance, replacement, or malfunction of the pump.

ii. A pump plan shall be submitted to the City for review and shall include:
iii. A site plan of the property with the building proposed;
iv. Vertical use and horizontal distance of the force main;
v. Pump literature (curve, model, horsepower, etc.);
vi. A hold harmless agreement to the City shall be executed before permits are issued.

5.3. Requirements are Minimum

The side sewer requirements set forth in these standards are minimum requirements intended to apply under usual and ordinary conditions. These requirements may be increased in unusual situations if the Director or designee find it necessary.

5.4. Connection of Another Structure to an Existing Side Sewer

All new development will require a new sewer stub within the right-of-way.

When an existing side sewer is used to connect another structure to the sewer system, the side sewer and the main line it is connected to shall be video inspected to insure the integrity and condition of the existing side sewer and the mainline connection. If the City determines that the side sewer or mainline tee is deteriorated, structurally unsound, cracked, leaking, or shows other indications that the useful life of the side sewer, stub, or tee connection is/are short, the side sewer, stub, and/or tee shall be replaced at the property owner's expense.

When structures on a property are demolished and the property redeveloped, the existing sewer stub in the right-of-way shall be replaced.

Chapter 6. Inspections and Testing

6.1. Call for Inspection

The permit fee covers one inspection visit. Any additional inspections resulting from any cause shall be charged at the current hourly rate.

No person shall cover or backfill any side sewer or public sewer without having first called for an inspection and having received permission and approval to backfill from the City.

If any person covers or backfills any side sewer or public sewer without inspection and without having obtained approval, the City will require the person to uncover the work so that a proper inspection can be made.

The contractor and/or owner are responsible for locating and connecting all plumbing outlets to the side sewer.

The City shall have access at reasonable times for the purpose of inspecting side sewers and ascertaining whether provisions of these standard have been complied with.

Inspections after regular office hours or on weekends are at the option of the City inspector by appointment. No inspections will be performed on legal holidays.

6.2. Materials and Workmanship

The City shall inspect and make such tests as it deems necessary in order to ensure that all sewer construction meets all requirements of these standards.

6.3. Water and Air Tests

Side sewers shall be tested, by the contractor, for visible leakage before backfilling by inserting a removable test plug at the lower end of the line and filling the line with water to its highest point. The contractor shall have the test on and ready when he calls for an inspection. A tee shall be provided in the sewer for insertion of the plug and shall be capped tightly and securely against back pressure upon completion of the test.

Air testing may be substituted for the above procedure.

Chapter 7. Maintenance of Side Sewers, Repairs, and Cap- offs

7.1. Side Sewer Cleaning

All side sewer cleaning contractors shall, prior to engaging in cleaning side sewers within the service area of the City, notify the City Wastewater Manager prior to start of that operation.

7.2. Rodding of Side Sewers

In order to ensure that the City's mains are not jeopardized by the procedure of rodding of any side sewer and to determine the cause of the blockage, if any, it shall be the responsibility of the owner or his/her representative to contact the City Wastewater Manager prior to rodding a side sewer.

7.3. Repairs

Any repairs to a side sewer required by the City shall be made within 30 days after the date of notice to the owner of the property served, notifying the owner to make the repair. In the event of an emergency, the City may establish a shorter period of time for the repair to be made or if the owner cannot be located or does not promptly make the repair, the City may make the repair under the procedures of Section 7.7, Failure to Comply of these standards.

7.4. Cap-Off

When any property owner desires to have side sewer service terminated for any property because the building or structure on it will be removed, destroyed, or condemned the side sewer shall be capped off. A cap-off permit is to be issued by the City prior to the cap- off. No structure will be removed from billing until the side sewer has been capped off in full compliance with this section and until all sewer service charges have been paid in full.

7.5. Abandonment of Existing Side Sewers

When an existing side sewer is abandoned, the pipe shall be securely capped with a mechanical plug and encased in concrete.

7.6. Reconnection of Existing Side Sewers

When an existing side sewer is to be reused after being disconnected or abandoned, the side sewer, the stub in the right-of-way, and the connection to the main shall be telespected (TV inspected) to determine the integrity and condition of the lines. If the City determines the side sewer, stub, or tee connection is/are deteriorated, structurally unsound, cracked, leaking, or shows other indications that the useful life of the side sewer, stub, or tee connection is/are short, the side sewer, stub, and/or tee shall be replaced at the property owner’s expense.

7.7. Failure to Comply

The City's attorney may be authorized to bring suit against any owner or any other responsible person to compel that person to make any connection provided for in these standards or to authorize the City to make the connection or obtain such other relief as may be appropriate. The suit may include a claim to obligate the owner to pay the City's costs, disbursements, and its actual reasonable attorney fees incurred in the action.

A. The City's attorney may be authorized to bring suit against the owner or any other responsible person to enforce needed repairs to a side sewer if, due to roots or any other cause, a blockage has been created or a cap-off is required; or to authorize the City to make the repair or cap-off at the expense of the owner or other responsible person and for such other relief as may be appropriate in the case. The suit may include a claim to obligate the owner or other responsible person to pay the City's costs, disbursements, and the City's reasonable and actual attorney fees incurred.
B. No permits shall be issued for the connection of a subsequent improvement on any property to the public sewer until all prior claims are fully paid and released.

Chapter 8. City Rehabilitation Projects That May Also Involve the Replacement or Repair of Private Side Sewers

8.1. Intent

The City may replace or repair private side sewers as part of a City initiated project to reduce the inflow and infiltration of extraneous water into the sanitary sewer system thereby conserving capacity and reducing liability claims.

8.2. Eligibility

All private side sewers within and limited to the project area are potentially eligible for replacement or repair and will be shown on City approved contract project drawings. The private side sewers must be connected to a City mainline at the time of project design. The City will, at its sole discretion, determine which private side sewers to replace or repair.

Property owners who accept the City's offer to have their private side sewer replaced or repaired must sign a Right of Entry form and accept ownership and maintenance responsibility of the private side sewer. There will be no additional cost to the property owner to replace or repair the private side sewer.

8.3. Unauthorized Connections

Connections to the City's sanitary sewer system not in the City's billing system shall be subject to the Rate Resolution and all charges due for new connections.

All unauthorized connections to the City's sanitary sewer system will be disconnected or corrected pursuant to Chapter 3 Side Sewer Requirements of these standards.

Chapter 9. Special Releases, Agreements and Documents

9.1. Developer Extension

The City may enter into contracts with owners of real estate as provided in the Municipal Water and Sewer Facility Act (35.91 RCW) to provide for the extension of mainlines, prior to the property owner(s) initiating plans for the improvement, where the owner(s) of property desire to construct additional sewer facilities not previously provided by the City and where such facilities may upon completion and acceptance become a part of the City's sewer system. See the latest revision of the City's Developer Extension Project Manual.

A. Gravity Service

A developer extension shall provide service by gravity if such service is feasible as provided in this section.

Any person applying for a Developer Extension Agreement with the City shall comply with the City's Developer Extension Manual.

The City shall, upon receipt of the Application for Developer Extension Agreement and the documents specified in the City's Developer Extension Manual, together with appropriate service fees, review the Application to determine whether gravity service is available.

The City shall, in determining whether gravity service is available, consider all alternative means of providing gravity sewer service to the property.

The City shall identify any means of providing gravity service, even if the cost of such service would be unusual or extraordinary. The City shall also provide a preliminary estimate of the cost of obtaining such service.

In the event the City has been able to identify a means of providing gravity sewer service, the applicant for the developer extension shall be so informed and instructed to determine the feasibility of proceeding with the developer extension employing gravity service.

In the event the applicant determines that proceeding with the developer extension employing gravity service is not feasible, applicant may request the City to determine whether the application meets the criteria provided for in Section B below for approval of a developer extension employing a lift station.

B. Service Provided By Lift Station

A Developer Extension may provide service by means of a lift station or lift stations if gravity service is determined not to be available by the Director, or if service by means of a lift station is requested by the applicant for a developer extension, provided, however, that the application must meet the criteria provided for in this section and be approved by the Director.

If the City determines that gravity service is not available, or if the person requesting a developer extension determines that the developer extension employing the means of gravity service identified by the City is not feasible, then the applicant for a developer extension shall pay an additional application fee and:

The City shall (a) determine whether a lift station could serve the property; and (b) further identify any adjacent property to which gravity service would be unavailable, which could also obtain service by such a lift station.

If the City determines a lift station can efficiently serve the subject property, together with adjacent property to which gravity service is unavailable, the City shall provide a preliminary estimate of the cost of constructing the developer extension employing a lift station, and shall also determine the amount of the cost attributable to providing service to the other properties. The applicant shall be advised that the Developer Extension Agreement will be granted only for construction of a developer extension employing a lift station with an emergency generator and potential overflow storage. If it is determined that gravity service is not available to a property, then service may be provided by means of a lift station with an emergency generator and in certain instances overflow storage capacity may be required.

9.2. Lift Stations and Appurtenances

If required, lift stations and appurtenances will be designed and constructed in accordance with the pump policy outlined below:

A. Whenever possible sewer service within the City system shall be provided by gravity service.
B. If it is determined that gravity service is not available to a property, then service may be provided by means of a lift station with an emergency generator and in certain instances overflow storage capacity may be required.

Wherever there is an unsewered area adjacent to an area for which gravity service is also unavailable, the system, when possible, shall be designed so that it will have adequate capacity to serve that area.

9.3. Lift Station Surcharge

The City shall determine the amount of any surcharge to the City's monthly service charges for sewer service, which it shall levy against properties served by a lift station to defray the costs of the lift station's maintenance and operation among those benefitting from it.

Once the surcharge has been fixed as a special rate for the area served by the lift station, the City shall record with the King County Recorder's Office a notice indicating that those properties will be subject to the surcharge as part of the Developer Extension Agreement.

9.4. Alternative Sewer Systems

If gravity sewer service to homes or businesses is not feasible, pressurized sewer systems will be considered for approval by the City. The applicant is responsible to provide a report showing why gravity service is not feasible, with supporting hydraulic and/or other calculations for consideration. Grinder pump service with sewer force main or a Lift station and force main will be considered, depending on the development proposal characteristics. No other new technology/system will be allowed within the City's sewer service area.

9.5. Easements

Easement widths shall be 15 feet for a single utility and 25 feet for dual utilities. Construction easements shall be 30 feet minimum in total width, including the permanent easement. When trench depths dictate or where pipe diameter or vault widths exceed four feet, a wider easement may be required by the Director.

In certain instances where easement widths cannot be reasonably achieved, the Director may allow a lesser easement width.

9.6. Hold Harmless and Indemnification

Where physical conditions render compliance with the provisions of these standards impracticable, the City may issue a special permit for installation of a side sewer requiring compliance with special provisions insofar as is reasonably possible. Such a permit shall be issued only upon the condition that the property owner execute and deliver to the City an instrument, in the form furnished by the City, agreeing to save harmless and indemnify the City for any damage or injury resulting from such sub-standard installation.

9.7. Sewer Service Agreement

A. Eligibility
    a. Properties which are not entitled to sewer service by reason of not having been subjected to a sewer assessment in favor of the City, but otherwise qualifying for sewer service, may be connected to the public sewer of the City and served by it when the owner of the property executes a sewer service agreement in the form approved by the Director and has executed the agreement signed by the owner.

B. Conditions
    a. The sewer service agreement shall provide the conditions of the contract, including but not limited to ownership, property to be served, use of the public sewers, sewer service charges classified and fixed, penalties and interest and recording of the document. The property owner shall agree to the formation of any Utility Local Improvement District (ULID), or to any annexation into the City in the area which includes the subject property. The contract shall constitute a charge against the property and be a covenant running with the land and shall bind the property and all future owners of it.

9.8. Alternative Construction Methods and Materials – Trenchless Technology

The City recognizes that there are certain advantages to using trenchless technology applications for sewer pipe and casing installation and sewer pipe rehabilitation. The City will solely decide whether to approve any alternative construction methods and materials proposed for development or capital project applications. The following types of trenchless methods will be considered. Technology is constantly changing and improving so a method, if not listed, will not be specifically excluded from consideration.

Trenchless technologies for new construction include microtunneling, horizontal directional drilling, auguring or boring, pipe jacking and pipe ramming. Costs, topography, soils conditions or other issues that may preclude traditional trench excavation and backfill construction often will dictate the use of these technologies. A preliminary engineering report evaluating these factors, including a geotechnical investigation and report must be submitted for approval. The engineering report must evaluate alternative construction techniques, including open-cut-and excavation.

Trenchless technologies used for existing pipe rehabilitation/replacement applications are summarized below. A preliminary engineering report is also required for recommending one of these technologies, but a geotechnical evaluation would not be required.

A. Sliplining existing pipe – is the insertion of a new pipe of smaller diameter into an existing host pipe
B. Cured in Place Pipe (CIPP) – is a lining process consisting of inverting a resin-impregnated flexible tube into the existing line using hydraulic or air pressure. The resin is cured using heat. The fold and form lining process is similar.
C. Pipe Bursting – consists of fragmenting and bursting the existing pipe into the surrounding soil by pulling a bursting head through the line. A new pipe is pulled behind the bursting head.

Chapter 10. Flushing Permit/ Industrial Discharge Permit

This policy is adopted by the City to allow the discharge of flushing water from domestic water service lines by municipal agencies into the City's collection system.

10.1. Flushing Permit Guidelines

A. The agency requesting permission to discharge into the sanitary sewer should provide a minimum of 72 hours (3 working days) advance notice of their intentions to discharge. (Advance notice requirement waived for emergencies.)

B. When requesting permission, the requesting agency must provide the following:
    a. Location of the proposed discharge.
    b. Amount of water to be discharged.
    c. Information on the concentration of chlorine or other disinfecting agents in the water to be discharged.
    d. Date and time of proposed discharge.
    e. Name of responsible contact person and an emergency telephone number of agency conducting discharge.

C. Prior to issuance of a City discharge permit, the receiving Treatment Plant (King County Metro or Edmonds) must first approve the discharge.

D. Prior to issuance of discharge permit, discharging agency must submit a written assurance to the City which will guarantee payment of the appropriate fees as determined above. In lieu of this guarantee, a cash deposit will be accepted.

E. A representative of the City must be on site during the actual discharge operation.

10.2. Industrial Discharge Permit Guidelines

An applicant who intends to discharge industrial waste into the City's sewage collection system must make application requests to the City of Shoreline and King County Wastewater Treatment Division Industrial Waste Program (KCIW) for discharges treated in King County and to the City of Edmonds Wastewater Treatment Plant (EWWTP) for discharges treated in Edmonds.

In general, discharges of industrial waste that is damaging to the collection system or at a rate of volume that would overwhelm the collection system will not be accepted. An Industrial Discharge Permit is only issued on a contingent basis subject to approval of the same discharge by the KCIW or EWWTP program(s).

Discharging industrial waste into the sewage collection system without obtaining an Industrial Discharge Permit will subject the violator to a fine.

The City charges a permit issuance fee and monthly inspection, monitoring and treatment fee for discharge into the wastewater collection system. King County and City of Edmonds discharge fees are administered and levied by the respective jurisdiction.

After obtaining approval from the KCIW or EWWTP and a discharge permit from the City on behalf of the District, the discharger is required to notify a City of Shoreline Wastewater Specialist at least 72 hours (3 Business Days) prior to the first discharge and schedule an

inspection of the discharge connection set up. No modifications may be made to the discharge connection set up, without approval, once the Wastewater Utility Specialist has approved the connection point for discharge.

Monthly discharge billings begin when the wastewater discharge connection set up has been inspected and approved. The discharger is required to report the rate of flow and volume discharged into the wastewater collection system by supplying a copy of the Discharge Log no later than the 15th of every month. Discharge Logs can be mailed, faxed or emailed to: ww@shorelinewa.gov.

Discharge Logs must be updated upon each discharge. Zero Discharge Logs must be reported during months with no water discharge. Failure to report your Discharge Log monthly will result in automatic billing for that month. The City on behalf of the District must be notified of the project end in order to inspect the disconnection of the discharge connection set up and close out the monthly billing and reporting requirements. Disconnecting without notifying the City on behalf of the District for inspection will result in a $150.00 No Notification Penalty Fee. Violation of the terms and conditions of the discharge permit may result in the cancellation of permits and subjecting the applicant to fines.

APPENDIX A - ACRONYMS AND DEFINITIONS

These acronyms and definitions are for use with this EDM Division 4. Unless specifically defined below, words or phrases used in this EDM Division 4 shall be interpreted to give them the meaning they have in common usage and to give this EDM Division 4 its most reasonable application.

Acronyms

ASTM: American Society for Testing Materials

BOD: Biochemical Oxygen Demand

CIPP: Cured in Place Pipe

DR: Dimension Ratio

EDM: Engineering Development Manual

EWWTP: City of Edmonds Wastewater Treatment Plant

FOG: Fat, Oil, and Grease

HDPE: High-Density Polyethylene Pipe

KCIW: King County Wastewater Treatment Division Industrial Waste Program

mg/L: milligrams per liter

PVC: Polyvinyl Chloride

RCW: Revised Code of Washington

SMC: Shoreline Municipal Code

ULID: Utility Local Improvement District

UPC: Uniform Plumbing Code

Definitions

Application for Developer Extension Contract. A completed application for a Developer Extension Contract.

Availability; Certificate of Sewer. A City issued document stating what types of sewer service are available to a property such as: main, stub, tee, saddle to main, or approved Developer Extension Contract, what conditions must be met before a permit will be issued in compliance with City rules and regulations, and it may also state if sewer service is not available.

Backup. A sanitary sewer overflow resulting from an obstruction in a sewer line, a failure of a pump system, or other cause.

Contractor, Licensed Sewer. Any person, partnership, corporation, or association duly qualified and competent to do construction, repair, or replacement of sewers under permits issued and who shall have been duly licensed by the City.

Cover. The depth of material lying between the top of the sewer and the finish grade immediately above it.

Developer Extension Contract. An agreement between a property owner and the City setting conditions for extending the sewer system and connecting to the City's mains.

Developer Project Manual. A document containing standards and specifications for Developer Extensions.

Director. City of Shoreline Public Works Director or designee.

Down Spout. A pipe which conducts water from the roof of a structure.

Dwelling, Auxiliary. A living unit on the property in addition to the primary dwelling, which must be 50-percent or less in square footage of living space than the primary dwelling on the lot, whether attached or not attached to the primary dwelling.

Dwelling, Multiple. A multiple family dwelling, namely a structure(s) designed and/or used to house two or more families living independently of each other and including in each unit all necessary household functions of each such family; and shall also include trailer or mobile home parks; trailer or mobile home courts. Each trailer, mobile home, or stall and each motel unit, hotel room, apartment, cabin, cottage, and add-a-rental shall be deemed a separate unit.

Dwelling, Single. A structure designed and/or used to house a single family or individual.

Emergency Generator. An alternate source of electrical power used to operate City equipment and pump stations during electrical failures.

Extension, Mainline. An addition to the City's system of sewers constructed by an owner or developer according to the terms and conditions of a Developer Extension Contract and is to be conveyed to the City upon the City's inspection and acceptance of the sewers as built by the property owner.

Fat, Oil, and Grease (FOG) Mitigation. A management plan for commercial establishments that generate Fat, Oil and /or Grease that is subject to discharge into the sanitary sewer system.

Industrial Waste. Any liquid, solid, or gaseous substance or combination thereof resulting from any process of industry, manufacturing, commercial food processing, business, trade, research and development, recovering, or processing of natural resources.

Interceptor. A sewer that receives flow from other large sewers or outlets and conveys the wastewater to a point for treatment or disposal.

Lateral. A sewer which will receive the flow from one or more side sewers and discharge into a trunk or interceptor.

Mobile Home. A moveable single dwelling.

Occupant. Any person or owner in physical possession of a structure to which sewer service is available.

Overflow Storage. A facility built to store sewage flow during a high flow event or failure of any part of a sewer system.

Person. Any individual, a homeowner or a representative of any of the following: company, partnership, corporation, association, society or group and the singular term shall include the plural and reference to any gender shall mean all genders.

Plumbing Outlet. The part of the lowest horizontal piping of a sewer system that receives the discharge waste pipes from inside the walls of the structure and connects to the side sewer.

Lift Station. A facility used to pump sewage to a higher elevation when it cannot flow by gravity through the City's sewer system. The design requirements are to be determined by the City's Engineer and will include an emergency generator and overflow storage facilities.

Station Surcharge. A monthly charge which the City may impose on properties served by a pump station in order to compensate the City for additional expense that is incurred in the maintenance and operation of such facility.

Saddle. A mechanical device acceptable to the City to install a tee onto a sewer main.

Sanitary Sewage. Water carrying waste discharged from sanitary facilities.

Gravity Service. Sewer service which may be obtained between a property and the City's existing system of sewers in accordance with the City's Rules and Regulations without use of a pump.

Service, Residential. Any sanitary sewerage system serving a single dwelling or multiple dwelling containing four units or less.

Service, Commercial. All sanitary sewerage systems other than residential.

Sewer, Private. A private sewerage system exclusive of side sewers which is neither owned, nor operated by the City, yet may serve to City conveyances.

Sewer, Public. Any sanitary sewerage system, including but not limited to interceptors, trunks, laterals, stubs, pump stations and force mains constructed by the City or by any person and conveyed to the City lying within the right-of-way or a perpetual easement obtained by or granted to the City.

Side Sewer. A sanitary sewer pipe leading from a plumbing outlet or other facility to the stub of the public sewer system.

Standard Specifications. Information contained in a document entitled *Developer Project Manual*.

Storm Drain. A public or private drain which carries storm and surface waters or drainage effluent from storm plumbing outlets and other water unpolluted by sanitary or industrial waste.

Stormwater. Waters on the surface of the ground or underground resulting from rainfall or other natural sources.

Structure. Anything constructed or erected on property within the City, designed, intended, or in any manner capable of being used for human occupation, recreation, employment, or other similar purposes and shall include but not be limited to trailers, mobile homes, house trailers, carports, and garages but shall not include fences and walls.

Stub. A sanitary sewer pipe leading from the public sewer to the property line or edge of a perpetual easement on the property being served.

Tee. A section of sewer pipe shaped in the form of a “T” which permits the connection of another section of sewer pipe entering at a 90-degree angle.

Trailer. A vehicle designed and intended for use on public roadways (not designed nor intended as a permanent residence) and temporarily connected to the sewer when parked at a trailer park or similar site.

Trunk. A sanitary sewer that receives flow from multiple tributary branches.

Wastewater. The spent water of a community. From the standing source, it may be a combination of the liquid and water-carried wastes from residences, commercial buildings, industrial plants, and institutions together with any ground water, surface water, and storm water that may be present.

APPENDIX B – STANDARD PLANS

Standard Plans

Standard Plan Number	Title	Revision / Adoption Date
601	MANHOLE TYPE I - SANITARY	
602	MANHOLE TYPE II - SANITARY	
603	MANHOLE TYPE III - SANITARY	
604	MANHOLE TYPE IIIA 48" - SANITARY	
605	MANHOLE OUTSIDE PAVING CONCRETE COLLAR - SANITARY	
606	MANHOLE LADDER & HANDHOLD DETAIL - SANITARY	
607	MANHOLE FRAME & COVER - SANITARY	
608	MANHOLE ADJUST DETAIL - SANITARY	
609	MANHOLE CHANNELING DETAIL - SANITARY	
610	MANHOLE OUTSIDE DROP CONNECTION - SANITARY	
611	MANHOLE INSIDE DROP CONNECTION - SANITARY	
612	SADDLE TYPE 48" DROP IN MANHOLE - SANITARY	
613	MANHOLE CUT IN MAIN SECTION - SANITARY	
614	TYPICAL TRENCH DETAIL - SANITARY	
615	PIPE ZONE BEDDING DETAIL - SANITARY	
616	SPLIT CASING DETAIL - SANITARY	
617	PIPE ANCHOR DETAIL - SANITARY	
618	VALVE BOX DETAIL - SANITARY	
619	LOCATE WIRE DETAIL - SANITARY	
620	LOW POINT DRAIN DETAIL - SANITARY	
621	AIR VALVE VAULT DETAIL - SANITARY	
622	CONNECTION TO EXISTING PRESSURE MAIN DETAIL - SANITARY	
623	VALVE MARKER DETAIL - SANITARY	
624	TRUST BLOCK-VARIOUS DETAIL - SANITARY	
625	THRUST LOAD CALCULATION - SANITARY	
626	SIDE SEWER CONNECTION DETAIL - SANITARY	
627	SANITARY SEWER SERVICE - NEW CONSTRUCTION	
628	SADDLE CONNECTION TO SEWER MAIN DETAIL - SANITARY	
629	SANITARY SEWER LATERAL DETAIL	
630	STUB LATERAL TO PVC CONNECTION - SANITARY	
631	SANITARY SEWER LATERAL PVC DETAIL	
633	GRINDER PUMP TO GRAVITY MAIN DETAIL - SANITARY	
634	GRINDER PUMP TO FORCE MAIN CONNECTION - SANITARY	
635	DUAL GRINDER PUMP TO LOW PRESSURE FORCE MAIN	

636	GRINDER PUMP INSTALLATION DETAIL - SANITARY	
637	GRINDER PUMP CONNECTION TO FORCEMAIN - SANITARY	
638	GRINDER PUMP SYSTEM SCHEMATIC	
639	HOUSE LATERAL CONNECTION TO GRAVITY MAIN - SANITARY	
640	HOUSE CONNECTION TO GRINDER PUMP - SANITARY	
641	HOUSE CONNECTION W/GRINDER PUMP TO GRAVITY MAIN - SANITARY	
642	HOUSE CONNECTION REQUIREMENTS - SANITARY	
643	GRINDER PUMP MATERIAL	
644	SANITARY SEWER CONNECTION (SEPTIC ABND)	
645	SANITARY SEWER CLEANOUT DETAIL	
646	BACKFLOW PREVENTER DETAIL - SANITARY	
647	BACKFLOW PREVENTER CLEANSWEEP DETAIL - SANITARY	
649	SMALL OIL WATER SEPARATOR- SANITARY	
650	MEDIUM OIL WATER SEPARATOR - SANITARY	
651	LARGE OIL WATER SEPARATOR - SANITARY	
652	CREASE INTERCEPTOR DETAIL - SANITARY	