

ORDINANCE NO. 08-260

AN ORDINANCE relating to regulating step systems for public sewers, authorizing administrative search warrants, and stating an effective date.

THE CITY OF LAKESIDE ORDAINS AS FOLLOWS:

Section 1. Lakeside Ordinance #205, as amended, is hereby amended to read as follows:

Ordinance No. 205

AN ORDINANCE PROVIDING FOR THE CONSTRUCTION, OPERATION AND MAINTENANCE OF THE SEWERAGE SYSTEM OF THE CITY OF LAKESIDE; PROVIDING FOR CHARGES FOR USE THEREOF; AND SETTING FORTH UNIFORM REQUIREMENTS FOR DIRECT AND INDIRECT CONTRIBUTORS INTO THE WASTEWATER COLLECTION AND TREATMENT SYSTEM FOR THE CITY OF LAKESIDE AND ALLOWING THE CITY TO COMPLY WITH ALL APPLICABLE STATE AND FEDERAL LAWS REQUIRED BY THE CLEAN WATER ACT OF 1977; DECLARING AN EMERGENCY; AND REPEALING ORDINANCE NO. 197.

Ordinance 05-252 repealed Section 1 through 34, of Ordinance No. 205, inclusive on June 9, 2005.

STEP/STEG

Section 35. Design of Septic Tank Effluent Pump or Gravity (STEP/STEG) Sewer Projects Involving Common Sewers.

- (1) Applicability. These criteria apply to STEP (septic tank effluent pump) units discharging to pressurized common sewers and to STEP or STEG (septic tank effluent gravity-draining) units discharging to small-diameter common collector sewers. Pressurized and small-diameter collectors have interactive hydraulic effects and solids handling limitations, which warrant a comprehensive engineering design. Approval of these designs, unlike gravity sewers, has been delegated under OAR 340-52-045. These criteria do not apply to the following:
 - (a) Individual or single-dwelling septic tank or grinder pump units discharging directly to a conventional common gravity sewer. Their design, review, inspection and approval are subject to regulations of the State Building Codes Agency.
 - (b) Tanks discharging to a drainfield or other on-site disposal system.

They are subject to design, review, inspection and approval as established in our on-site sewage disposal rules (OAR340-17, 72 & 73).

(c) Vacuum sewer collection systems. Technical features should conform with recommendations in the literature. Administrative requirements for vacuum sewers are similar to those listed below for STEP systems.

- (2) Types of Step Systems. In a typical STEP system, household sewage is pretreated in a septic tank where gross solids and grease are held back. A “clear” effluent from the mid-depth of the tank is conveyed to a common sewer. The effluent is pumped from the septic tank under pressure to a small diameter, pressurized collector sewer. Effluent may also flow by gravity, where terrain allows, to small-diameter gravity collector lines. This type of STEP system is often called a STEG (septic tank effluent gravity) or STED (septic tank effluent drain) system to distinguish it from pumped systems. However, these guidelines and criteria apply to both.
- (3) Scope. A STEP/STEG system is considered to include all of its components beginning with the septic tanks, and ending at the point(s) of discharge into a conventional gravity sewer or treatment plant. Building drains discharging into tanks are regulated under the Oregon State Plumbing Code, and are not considered part of a STEP system.
- (4) Administrative Requirements. All additions and extensions to existing STEP (or STEG) systems, as well as new systems, are subject to review and approval per OAR 340-52. Submittals should document fulfillment of administrative requirements by the City of Lakeside.

The OWNER is defined as the municipality, sanitary district, private sewage utility or sanitary authority which is responsible for the operation of the system. The property being served is defined as the USER.

Legal title to tanks, pumps, or other components transfer to the owner. The objective of vesting title in the owner instead of the user is to avoid potential for cost disputes over equipment selection and repair methods. Having the user “own” title to any of the system components may be considered on a case-by-case basis.

Regardless of where title is vested, the owner shall completely control all tanks, pumps, service lines, and other components of the system on private property. This requirement is essential to assure operable hydraulics and overall system reliability. The administrative requirements are:

- (a) The city shall maintain ultimate responsibility and authority for design, equipment and materials selection, installation, operation and maintenance of the entire STEP/STEG system including tanks, controls and other appurtenances on private property.
- (b) The city shall possess a recorded general easement or deed restriction to enter the private property being served, and to access the system and its components. Access must be guaranteed to operate, maintain, repair, restore service, and remove sludge.
- (c) No system shall be operated without the direct field supervision of a certified operator, in accordance with OAR 340-49. An operations and maintenance manual shall be submitted for review prior to startup. In

accordance with OAR 340-52, no STEP/STEG system shall be operated without an approved manual.

(d) The city shall maintain and operate STEP/STEG facilities without any interruption, sewage spills on the ground, sewage backup into buildings, or other unhealthy conditions. The city shall establish operating procedures and maintain certified staff to assure:

- (i) Timely response to outages and trouble calls.
- (ii) Adequate spare parts on hand including spare pumps, piping, electrical controls, and valves. Equipment should be standardized to reduce spares. Inventory shall include, at a minimum:

1 spare of each type of pumping unit per 15 customers served.

1 spare control panel per 30 customers.

1 spare set of level controls per 30 customers.

1 spare effluent screen per 100 customers.

- (iii) Annual inspection of each tank and sludge removal every five years, or as experience dictates.

(e) Essential provisions include:

- (i) Exclusion of infiltration and inflow, including a ban on connection of non-sewage wastewater.
- (ii) Prohibition of and penalties for modifications, repairs, or tampering by the user.
- (iii) Control of materials and workmanship and construction standards.
- (iv) Regulations and procedures for connection to a STEP/STEG system of new users, including signing of easements as a condition of service.
- (v) Regulations for adding new STEP/STEG systems and extending existing systems to serve new areas, including submittal of plans as outlined below.
- (vi) Record keeping for all installed STEP/STEG tanks shall be kept by address.

(5) Design Submittals (Technical Data). Plans and specifications shall be submitted for prior approval in accordance with OAR 340-52. Submittals shall include:

- (a) Engineer's design calculations covering hydraulics and the sizing of STEP/STEG tanks, pumps, and lines. System design shall conform with recommendations published in Manual of Practice FD-12, Alternative Sewer System, Water Pollution's Control Federation, 1986, and with applicable Oregon Administrative Rules.
- (b) Technical standards and specifications for STEP systems to be installed, including acceptance testing.
- (c) Copy of current ordinance allowing use of STEP/STEG systems with the cities service area.
- (d) Copy of access easement form to be signed by user.

- (e) Engineer's evaluation of hydrogen sulfide productions from the STEP mainlines and design of control measures to protect gravity sewer system against corrosion.
 - (f) List of spares and repair materials to be supplied to the city to assure reliable operation of the system.
 - (g) Copy of the current approved constructions, design, and equipment standards that have been adopted by the city.
 - (h) For each new system or extension, a Land Use Compatibility Statement in accordance with OAR 340-18.
 - (i) A copy of the proposal form or similar itemized list of quantities involved in the project.
 - (j) The name and address of the owner, developer, and engineer shall be shown on the plans. Easements shall also be shown. Blanket easements may be indicated by note.
- (6) Tanks and Inlet Piping.
- (a) Single tanks serving multiple lots under separate ownership will not be allowed. Each residence or site must have a separate tank. The rare exception will be considered case-by-case.
 - (b) Systems serving facilities such as RV parks, mobile home parks, apartments, and unit developments are under the control of a single customer or responsible association. At the discretion of the engineer, such systems may be designed with shared tanks, subject to requirements of the Oregon State Plumbing Code.
 - (c) Tanks shall be sized according to flow per criteria published in OAR 340-71-22004), On-Site Rules, page 71-51. Minimum tank capacity shall be 1000 gallons.
 - (d) Construction details and configuration of tanks shall generally conform with OAR 340-72-050, Dosing Tank Construction, page 73-13. All tanks shall feature inlet and outlet risers with lockable covers. Covers shall be designed for H-20 loading in traffic areas. Inlet riser shall be a minimum 8-inch diameter. Outlet risers shall be sized to accommodate and access the equipment installed, with 24-inch diameter as a minimum. Intermediate 8-inch risers will be required on large tanks over 3000 gallons.
 - (e) Tanks shall be designed for all anticipated structural loads, including soil backfill. Where vehicle access is allowed, the tank shall be protected with an appropriate structural slab. All designs shall be stamped per OAR 340-52.
 - (f) To assure retention of solids and grease in the tank, all tanks shall feature a plastic effluent screen. Screens shall conform with the standard published in OAR 340-73-055(1)(d) on page 73-15. No unscreened discharges will be allowed.
 - (g) Flotation of tanks in areas of high groundwater shall be anticipated in system design. Structural design features and operational procedures shall be employed to prevent flotation. Equalization of buoyancy through hydrostatic pressure-relief valves installed in a STEP tank will

not be allowed. Normally a tank should be filled immediately after installation and, on passing the leakage test, should not be pumped down more than 3 feet there after.

- (h) Existing septic tanks should be removed or abandoned in place. Existing tanks with fully meet the requirements, including leakage test, may be considered for use in the STEP/STEG system. However, to retrofit the effluent screen, flow controls, access risers, and other specified features is usually impractical.
- (i) Existing watertight tanks in good condition may be allowed, on a case-by-case basis, to remain in service and under the customer's private control as pretreatment units discharging to a new tank meeting the approved specifications.
- (j) Existing building drains must be replaced and inspected per code. Alternatively, a cleanout shall be installed adjacent to the building and the drain shall be tested in accordance with the Oregon State Plumbing Code. Only watertight drains in good condition may be connected to a STEP/STEG tank.
- (k) Pipe connections to tanks shall be made with an approved commercial waterstop manufactured for the intended purpose. Field improvised waterstops or adapters will not be approved.
- (l) All sewage from the building including kitchen, laundry, and bath wastes shall be intercepted and conveyed to the STEP/STEG tank.
- (m) Prior to startup, tanks shall be smoke-tested to confirm that all connected plumbing is properly vented through external house stacks, in accordance with Oregon Building Code Agency regulations.

(7) Pumps and Outlet Piping.

- (a) To maintain the efficiency of the specified screen, each individual pump discharge and gravity outlet shall be limited to 10 gpm maximum flow rate by means of a flow-control orifice, regardless of influent flowrate or downstream head conditions. Flows exceeding 10 gpm tend to blind the screen over time, requiring them to be cleaned. Flows shall generally be controlled between 5 and 10 gpm.
- (b) Effluent pumps shall be submersible turbine pumps and shall generally comply with the provisions of OAR 340-73-055, sized as appropriate for head/capacity conditions for the design. Installed pumps shall be capable of passing a 24-hour wet test in constant operations against shutoff head. Conventional centrifugal sewage pumps are usually less satisfactory for STEP system service because of their flat characteristic curve, but may be considered case-by-case for extremely low-head installations. Grinder pumps are unacceptable for discharge to STEP systems because of solids and grease.
- (c) Pressurized service lines from a STEP tank to the common collector sewer shall be minimum 1-inch diameter. A shutoff valve (gate, plug, or ball) shall be installed in a tamperproof valve vault at property line. Unless otherwise approved, a swing check valve shall be installed in the same vault, and an additional swing check valve shall be installed

at the tank outlet. Valves shall be full-port type and constructed of non-corrodible materials such as plastic and stainless steel.

- (d) Gravity-flow service lines from STEG tanks to small diameter gravity sewers shall be minimum 2-inch diameter. All service lines shall have a minimum capacity of 10 gpm flowing half full, based on Manning's $n = 0.013$. Each service line shall be vented at the upper end. Venting shall be continuous through the tank and building stack.

(8) Pumps and Controls.

- (a) Power is normally furnished by the user. Pump control panels should be energized through a dedicated breaker in the building served.
- (b) Control panels shall be NEMA-4X with a locked door. Panels shall be exterior mounted and should be visible to city service personnel from public right-of-way. Electrical conduits shall be sealed gas-tight at the tank and the panel.
- (c) Installations shall contain a high-water alarm switch, activating a user-cancelable buzzer and an alarm light. Access to the light reset button shall be restricted to the cities service personnel. Alarms shall [be] separately fused so that trip of pump breaker shall not disable alarm.
- (d) Pump control panels shall be equipped with elapsed time meters, and may also be equipped with event counters at the option of the city. Operational controls shall be HAND/OFF/AUTO/. Dual pumping units shall have operator-cancelable automatic alternators and event counters.

(9) Common Pressure Sewers.

- (a) Common pressure sewer shall be minimum 2-inch diameter PVC or polyethylene pressure pipe, installed with toning wire or detachable tracer tape.
- (b) Pipe sizing and layout shall generally conform with recommended practices in WFCP Manual of Practice FD-12, Alternative Sewer Systems, Table 2.1 and Chapter 3.
- (c) Isolation valves, flushing connections, vacuum release valves, air release valves, and pig launching stations are optional. Such appurtenances shall be at the discretion of the engineer and the city, subject to OAR 340-52 approval.

(10) Common Small-Diameter Gravity Sewers.

- (a) Sewers shall be minimum 4-inch diameter, installed with tracer tape or toning wire.
- (b) Sewers shall be designed to flow half full, based on 1 gpm per dwelling and Manning's $n = 0.013$. Minimal velocities are acceptable. However, low-velocity and flooded sections may require sulfide controls.
- (c) Subject to a 4-inch minimum diameter, inverted siphons shall be designed to flow at a velocity of 0.5 feet per second or greater, based on a Hazen-Williams coefficient of 100.
- (d) Cleanouts shall be sealed with a screwed cap or plug secured under a tamperproof (bolt-down) cover. Cleanout spacing shall be

approximately 300 feet. Conventional open-channel manholes will not be allowed except where desired to site a flume for flow measurement.

(11) Sulfide Control.

- (a) Because of corrosion, odor, and safety concerns, STEP discharges into unarmored gravity sewers shall not exceed 0.1-mg/l hydrogen sulfide content.
- (b) Common pressure sewers:
 - (i) STEP system designs shall include effective controls to prevent the development of hydrogen sulfide in flooded service lines, pressure sewers, and flooded sections of small-diameter gravity sewers.
 - (ii) Pressure sewers shall be oxygenated by means of air injections into the head (low point) of each common sewer line. End-of-pipe chemical oxidation systems are relatively expensive and will not usually be approved.
 - (iii) Air injection rate shall be 2 scfm per inch diameter. Air supply shall be a receiver-mounted compressor rated at the static head on the system at the point of injection. Static head shall be computed as the sum of all ascending segments in the line being aerated.
 - (iv) No automatic air release valves shall be installed. Manual air release valves and automatic vacuum valves may be installed where warranted in the judgement of the engineer.
 - (v) Air injectors shall be 1-inch copper tubing and saddle-mounted corporation stop. Adjacent to the corporation stop, injector piping shall contain a suitable check valve, needle valve, airflow meter with pressure gauge, and an isolation valve and pressure reducer at the receiver, along with necessary unions and drip legs for condensate. All fittings shall be suitable for air service at the rated pressure of the compressor.
 - (vi) Compressor and injector assembly shall be secured in a locked vault. Compressors and vaults should be muffled, silenced, and soundproofed. Compressors may be installed below grade in noise-sensitive areas. Receivers shall be fitted with automatic drain valves for condensate purge.
 - (vii) Spare or standby compressors will not be required for STEP systems
 - (viii) An approved commercial air-stripper vented through an activated carbon filter may be installed as a polishing process. This process may be installed prior to discharge into any gravity sewer where odor and safety may be a concern, at the engineer's or cities discretion.
 - (ix) New sulfide control methods will be considered and evaluated on their merits.
- (e) Unflooded Sections of Common Small-Diameter Gravity Sewers.

Development of hydrogen sulfide in small-diameter sewers is minimal, assuming sufficient fall or grade to provide surface turbulence, continuous venting through connected house stacks, and the absence of flooded sections. In such systems, sulfide controls may be limited to pumped STEP services connected to the sewer.

- (i) Pressurized STEP services connected to small-diameter gravity sewers shall be back-drained between pump cycles to purge the entire service. A vacuum release valve shall be installed at the high point of the service and a back drainage solenoid valve shall be installed on a tree at the pump in place of the check valve. Valve shall be 1-inch, full port; explosion-proof, wired to close when the pump is on. Vacuum release valve shall be installed in a tamper-proof vault readily accessible to cities service personnel.
 - (ii) To assure against sulfide formation in slow-moving lines, small-diameter sewers should be sized to flow no more than half-full at average daily flow and to provide at least 0.5 fps velocity when flowing half-full. Minimum grades should be based on Manning's $n = 0.013$:
 - 2 inch @ 0.16 percent
 - 3 inch @ 0.08 percent
 - 4 inch @ 0.05 percent
 - 6 inch @ 0.03 percent
 - 8 inch @ 0.02 percent
 - (iii) Adverse grades and inverted siphons will create flooded sections, and shall be aerated as described above.
 - (iv) Alternatively, the downstream conventional sewer and manholes shall be armored with approved acid-proof coatings for a sufficient distance to dissipate the hydrogen sulfide. The engineer, depending on sewer turbulence and anticipated initial sulfide strength shall determine the required distance case-by-case. Normally a requirement to armor approximately 2000 feet should be anticipated.
- (12) Construction.
- (a) Construction should comply with applicable provisions of the 1990 Oregon APWA Standard Specifications for sanitary sewer construction. All mechanical and electrical equipment should be subjected to performance testing prior to acceptance by the city. Contractor's and supplier's warranties must be obtained.
 - (b) Septic tanks shall be tested hydrostatically after installation and after all pipe penetrations have been completed. Tanks shall be filled to a marked point 4-inches above the base of the risers. Leakage shall not exceed 50 gallons per day. Existing building drains and vent stacks being reconnected shall be tested as described above.
 - (c) All piping shall be pressure tested. Because of shallow burial and the strength of pressure-rated piping, there is often little potential for pipe

deflection, and testing for deflection is optional. The engineer and city should determine whether installed piping should be tested for deflection case-by-case, and should specify the design of mandrel to be used.

- (13) Certification. The engineer (or his authorized agent per OAR 345-52-040) shall inspect the construction and, on completion, shall certify proper construction in accordance with the approved plans per OAR 340-52, including any change orders subsequently approved.

PENALTY

Section 36. Civil Penalties. Any user who violates an order of the circuit court or who willfully or negligently failed to comply with any provision of this ordinance, and the orders, rules, regulations and permits issued hereunder, shall be fined not less than \$50.00 or more than \$500.00 for each offense. Each day on which a violation occurs or continues shall be a separate offense.

Section 37. Falsifying Information. A person who knowingly makes a false statement, representation, or certification in an application, record, report, plan or other document filed or required to be maintained pursuant to this ordinance or wastewater contribution permit, or who falsifies, tampers with, or knowingly renders inaccurate a monitoring device or method required under this ordinance, shall, upon conviction, be punished by a fine of not more than \$500.00.

Section 38. Severability. The sections of this ordinance are severable. The invalidity of a section shall not affect the validity of the remaining sections. If any section of this ordinance is in conflict with state or federal law; these state and federal laws take precedents over the sections in Lakeside Ordinance No. 205.

Section 39. Emergency Clause. Whereas, it is necessary to maintain the peace, health and safety of the citizens of Lakeside an emergency is hereby declared to exist. This ordinance therefore, shall be come in force with the effective date of this ordinance upon its passage by the council and approval of the mayor.

Section 39. Repeal. Ordinance No. 197, adopted November 9, 1995. (should be Section 40)

The foregoing Ordinance was duly adopted by the Lakeside City Council at a regular meeting held November 14, 1996.

Section 2. SECTION 101 IS HEREBY ADDED TO Ordinance #205, as amended. (should be Section 41)

ADMINISTRATIVE SEARCH WARRANTS

Sections:

101.010 Authorizing circuit court judge.

101.020 Grounds for issuance.

101.030 Procedure for issuing search warrant.

101.040 Execution of search warrant.

101.010 Authorizing circuit court judge.

The circuit court judge is hereby authorized to issue administrative search warrants upon application by the city attorney, building official, code enforcement officer, or fire chief, or their duly authorized representatives, acting in the course of their official duties, whenever an inspection or investigation of any place is required or authorized by any municipal ordinance or regulation. The warrant is an order authorizing the inspection or investigation at a designated location.

101.020 Grounds for issuance.

- A) A search warrant shall be issued only upon cause, supported by affidavit, particularly describing the applicant's status in applying for the warrant hereunder, the ordinance or regulation requiring or authorizing the inspection or investigation, the location to be inspected or investigated, and the purpose for which the inspection or investigation is to be made, including the basis upon which cause exists to inspect. In addition, the affidavit shall contain either a statement that entry has been sought and refused or facts or circumstances reasonably showing that the purposes of the inspection or investigation might be frustrated if entry were sought without a warrant.
- B) Cause shall be deemed to exist if reasonable legislative or administrative standards for conducting a routine, periodic or area inspection are satisfied with respect to the location or there is probable cause to believe that a condition of nonconformity with a health, public protection or safety ordinance, regulation, rule, standard or order exists with respect to the particular location, or an investigation is reasonably believed to be necessary in order to determine or verify the condition of the location. It shall be conclusively deemed to exist if a step system has not been inspected in the last five years.

101.030 Procedure for issuing search warrant.

- A) Before issuing any search warrant, the circuit court judge shall examine under oath the applicant and any other witness and shall be satisfied of the existence of grounds for granting such application.
- B) If the circuit court judge is satisfied that cause for the inspection or investigation exists and that the other requirements for granting the warrant are satisfied, she or he may issue the warrant, particularly describing the name and title of the person or persons authorized to execute the warrant, the place to be entered and the purpose of the inspection or investigation. The warrant shall contain a direction that it be executed on any day of the week between the hours of 8:00 a.m. and 6:00 p.m., or where the circuit court judge has specially determined upon a showing that it cannot be effectively executed between those hours, that it be executed at any additional or other time of the day or night.

101.040 Execution of search warrant.

- A) Except as provided in subsection B of this section, in executing a search warrant, the person authorized to execute the warrant shall, before entry, make a reasonable effort

to present credentials, authority and purpose to an occupant or person in possession of the location designated in the warrant and show her or him the warrant or a copy thereof upon request.

- B) In executing a search warrant, the person authorized to execute the warrant need not inform anyone of his or her authority and purpose, as prescribed in subsection A of this section, but may promptly enter the designated location if it is at the time unoccupied or not in the possession of any person or at the time reasonably believed to be in such condition, but shall orally announce their credentials and authority to execute the warrant prior to entry.
- C) A peace officer may be requested to assist in the execution of the warrant.
- D) A warrant must be executed and returned to the circuit court judge by whom it was issued within 10 days from its date, unless such circuit court judge before the expiration of such time, by endorsement thereon, extends the time for five days. After the expiration of the time prescribed by this subsection, the warrant unless executed is void.

Section 1. Effective Date. (should be Section 42)

The Ordinance shall become effective May 21, 2008.

FIRST READ to the Council the 10th day of April, 2008.

PASSED by the Council this 8th day of May, 2008.

SIGNED by the Mayor this 8th day of May, 2008.

Effective this 21st day of May, 2008.

ATTEST:

Charlie Hill
Charlie Hill, City Recorder

APPROVED:

Orville Nelson
Orville Nelson, Mayor