TANEY COUNTY REGIONAL SEWER DISTRICT
6733 E State Highway 76, Kirbyville, MO 65679 | tcrsd.org | 417-544-0655

Low-Pressure Sewer System and Grinder Policy

The District has adopted the following policy effective May 2, 2006 pertaining to the approval of new developments proposing low-pressure sewer systems connecting to the District's system and the usage of grinder pumps. The District will not accept any other types of sewage collection systems other than conventional gravity sewer systems or low-pressure sewer systems that conform to the guidelines included herein. The District will not accept ownership, operation, or maintenance responsibility for any new grinder pump units except those pump units that are to be installed and utilized in a regional pumping/lift station that is approved by the District's Board of Trustees.

DEFINITIONS

System Cost Analysis

An analytic method whereby the cost of construction and the increased costs of operation and maintenance of a proposed low-pressure sewer system can be measured against the construction cost of a conventional gravity sewer system. A Professional Engineer licensed with the State of Missouri shall prepare the analysis.

Development

Any human-caused change to improved or unimproved real estate that requires a permit or approval from the District or the Taney County Planning and Zoning Department.

Developer

That person or legal entity who is improving a parcel of land within the boundary of the District and who may or may not be the owner of the property.

Conventional Gravity Sewer System

A series of pipelines or conduits and all structures, devices, appurtenances, and facilities necessary used for collecting or conducting raw waste by gravity flow to an ultimate point for treatment or handling. All sewer mains shall be 8-inches or larger in diameter and manholes are to be placed at all changes in deflection and pipe slope.

Grinder Pump Impact Fee

A fee assessed by the District to a Developer or individual property owner before District approval and acceptance of a low-pressure sewer system or approval of a grinder pump connected to an existing District owned pressure sewer main to account for the projected 20-year intrinsic costs associated with the effects of hydrogen sulfide gas.

Individual Grinder Pump Unit

A grinder pump unit designed to serve a specific residential or commercial structure.

Low-Pressure Sewer Systems

A low-pressure sewer system is considered as two (2) or more individual grinder pump units discharging into a common force main.

Multi-Family Structure
A building designed and used exclusively as a dwelling by two or more families occupying separate suites.

Property Owner
The person, firm, corporation, or partnership shown on the records of the Taney County Recorder's office to be the one in whom legal or equitable title rests.

Sewer Easement
A strip of land granted by the property owner to the public to be used for the purposes of construction and maintenance of public wastewater utilities.

Service Lateral
That part of the drainage system that extends from the end of the building drains and conveys its discharge to the public sewer. For low-pressure sewer systems, the public sewer begins at the point of connection of the grinder pump discharge line to the District owned sewer pressure main.

SYSTEM COST ANALYSIS AND APPROVAL OF LOW-PRESSURE SEWER SYSTEMS
New developments proposing the construction and usage of a low-pressure sewer system that will connect to the District's sewer utility must present a thorough system cost analysis completed by an engineer licensed and certified with the State of Missouri comparing the construction and the additional operation and maintenance costs of the low-pressure sewer system to the construction costs of a conventional gravity collection system.

Low pressure sewer systems create hydrogen sulfide gasses that result in nuisance odors and deterioration of sewer infrastructure. Therefore, it is appropriate for the District to assess the Developer/property owner a grinder pump impact fee to cover the additional costs for odor control and repair to infrastructure damaged by hydrogen sulfide gasses.

The system cost analysis must include all components of the system that will be owned and operated by the District, including:

1. Gravity sewers
2. Manholes
3. Lift stations
4. Force mains
5. Grinder pumps (whether or not they are installed by the Developer)
6. Grinder pump impact fees
7. Low pressure sewer mains
8. Low pressure lines between grinder pumps and mains
9. Flush assemblies
10. Valves (all types)
11. All other related infrastructure.

The construction costs shall include all materials, labor, and overhead for a complete installation. The District may require that construction costs for items not specifically listed be included so long as they are required components of the system.

The system cost analysis shall include a drawing(s) showing preliminary layouts for both the low-pressure sewer system and a conventional gravity sewer system alternative. This drawing(s) must be prepared by a Professional Engineer licensed by the State of Missouri and must include the following:

1. Project name
2. Developer's name and address
3. Engineer's name and address and Engineer's signed and dated seal
4. Location map drawn to scale
5. Existing and proposed property lines
6. Existing utilities
7. Existing structures
8. Existing roads and public infrastructure
9. Existing elevation contours
10. Proposed elevation contours (if required by the District)
11. Proposed low-pressure sewer concept plan view (showing all system components)
12. Conventional gravity sewer concept plan view (showing all system components)
13. Drawing scale

At the District's discretion, the system cost analysis may be subject to additional engineering review at the Developer/Owner's expense. The District will review each request to construct a low-pressure sewage system on its own merit and the District's decision will be final.

If the District approves a request for a low-pressure sewer system, the Developer may proceed with the design, permitting, and construction of the low-pressure sewer system based on the criteria contained within this Policy.

An example system cost analysis summary table (not including drawing) is included in Attachment A.

GRINDER PUMP IMPACT FEE ASSESSMENT

The District shall assess a grinder pump impact fee to the Developer or individual property owner for each grinder pump installed on a District approved low-pressure sewer system. By requiring the Developer to pay the grinder pump impact fee, the increased costs of odor control and infrastructure deterioration repair due to hydrogen sulfide gas will be a part of the development costs rather than being subsidized by other sewer customers.

The grinder pump impact fee is shown in Attachment B and shall be paid to the District in the form of a cashier's check prior to the District's issuance of a letter to the Taney County Planning Commission stating that the Developer has complied with the District's requirements. This letter must be received by the Taney County Planning Commission before an associated plat can be recorded. The grinder pump impact fee(s) must be paid before the District will accept any portion of the low-pressure sewer system. For individual property owners, this fee shall be paid prior to the issuance of a sewer construction permit by the District. The grinder pump impact fee is in addition to capacity charges assessed by the District. The purchase and installation of the grinder pump unit(s) and all associated infrastructure and appurtenances are the responsibility of the property owner(s), whether or not the property owner is the Developer.

All new subdivision plats and covenants, conditions, and restrictions applicable to parcels to be served by low-pressure sewer systems shall contain the following note:

"The property owner is responsible for installing a District approved grinder pump unit and all associated infrastructure and appurtenances at their cost. The ownership, operation, and maintenance of the grinder pump(s) shall be the responsibility of the designated continuing authority. The property owner shall also pay a capacity charge fee to the Taney County Regional Sewer District prior to the issuance of a sewer construction permit. The amount of the capacity charge shall be in accordance

with the Taney County Regional Sewer District's policy at the time the sewer construction permit is requested by the property owner."

A copy of all newly recorded plats, covenants, conditions, and restrictions shall be submitted to the District prior to the issuance of any sewer construction permits for the associated lots.

The grinder pump impact fee shall be reviewed annually and may increase or decrease to reflect the latest cost data. After the Developer pays an impact fee, the Developer and/or property owner shall not have the right for a refund if the District subsequently reduces the impact fee, nor shall they be assessed additional fees if the District raises the impact fee.

GRINDER PUMPS APPROVED TO BE UTILIZED

The District requires the use of progressing cavity type pumps. Those currently approved by the District include: (1) Environment-One semi-positive displacement grinder pump, and (2) Delta Environmental Products D1P20-21 pump. Companies and/or manufacturers requesting District approval of their grinder pump shall be required to submit technical data to the District and pay for the District's engineering review of their product. Costs for the engineering review will be determined prior to the review and must be paid to the District's Engineer in advance. The District will approve no more than three different type of pumps.

The grinder pump manufacturer shall provide a factory-trained serviceman to perform installation, start-up, and field-testing prior to final approval by the District of the service connection. The manufacturer shall submit to the District the manufacturer's start-up authorization form describing the results of the tests performed for each grinder pump station tested, and bearing the signature of the manufacturer's authorized technician, signifying approval of the installation and test results.

GRINDER PUMP USAGE

Each individual lot and/or residential unit served by a low-pressure sewer system shall have a separate grinder pump unit and service line. Electrical service shall be supplied to the grinder pump unit by the structure it serves.

Multi-family structures consisting of two (2) or more units and commercial developments will be served by a duplex unit(s) and the size of the tank shall be sized according to the manufacturer's recommendations. Grinder pump units serving multi-family structures consisting of two (2) or more units shall be served by an independent electrical source and not connected to any electrical source serving any specific dwelling unit.

Under no circumstances shall the District be responsible to pay electrical costs associated with the operation of any privately owned grinder pump unit.

PROVISION OF EASEMENTS

Sewer easements providing for the operation and maintenance of any sewer system to be dedicated to the District shall be developed, duly recorded and supplied to the District prior to the District's acceptance of the system. Detailed sewer easement drawings clearly outlining the exact location of each easement shall also be submitted with the easement documents.

PROVISION OF RECORD DRAWINGS

Record drawings showing the location, size, depth, and materials of each component of the low-pressure sewer system shall be provided to the District in paper and in an AutoCAD compatible electronic format. The drawing(s) must be drawn to scale. Record drawings must be received by the

District prior to their acceptance of any portion of the low-pressure sewer system.

MAINTENANCE OF LOW-PRESSURE SEWER SYSTEMS

Prior to the District's acceptance of any low-pressure sewer system, all required testing and inspection procedures in compliance with all Missouri Department of Natural Resources and District rules, regulations, specifications, and design guidelines must be completed, documented, and filed with the District. In addition, all Missouri Department of Natural Resources and District requirements must be met. The District reserves the right to inspect all systems before acceptance and may reject any system that does not meet its requirements.

After the District accepts a low-pressure sewer system and the grinder pump impact fees have been paid, the District will assume the ownership and responsibility for operating and maintaining the low-pressure system. The District's responsibility will extend only to the sewer main and does not include individual grinder pump units or service lines. All new collection systems connecting to the District's systems shall be owned and operated exclusively by the District. Individual grinder pump units and sewer service lines will not be owned, operated, or maintained by the District.

ATTACHMENT A

EXAMPLE SYSTEM COST ANALYSIS SUMMARY TABLE

Description of example project: Assume a 20-lot residential subdivision having a single road with lots on both sides and a gravity sewer main at the low end of the road. Assume that the road is on a ridge with the lots falling away from the road making all lots conducive to walkout construction. Assume that two gravity sewer lines are required due to terrain – one down the rear of each row of lots. Assume that a single pressure line can be installed along the road.

OPTION 1: Public Gravity Sewer System

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT COST	COST
1	Manholes	EA	7	$1,250.00	$8,750.00
2	Connect to existing manhole	EA	1	$500.00	$500.00
3	8” PVC gravity lines	LF	2,250	$45.00	$101,250.00
4	Wye and risers	EA	20	$150.00	$22,750.00
				Total	**$133,250.00**

OPTION 2: Public Low Pressure Sewer System

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT COST	COST
1	Grinder pumps	EA	20	$ 5,000.00	$100,000.00
2	Small dia low pressure mains	LF	1,015	$15.00	$15,225.00
3	Connect to existing manhole	EA	1	$500.00	$500.00
4	1-1/4” line between gp and main	LF	1,500	$12.50	$25,000.00
5	Grinder pump impact fees/per unit	EA	20	$1,995.00	$39,900.00
				Total	**$180,625.00**

CONCLUSION

Option 1, Public Gravity Sewer System, is more economical; therefore, a low-pressure sewer system will not be accepted by the District.

ATTACHMENT B

Grinder Pump Impact Fee as of May 2, 2006

DESCRIPTION	FEE
Simplex Grinder Pump	$1,995.00
Duplex Grinder Pump	$3,990.00

Basis for Grinder Pump Impact Fee amount:

DESCRIPTION	FEE
Yearly odor control / hydrogen sulfide chemical costs	$50,000.00
Yearly lift station bubbler/aerator O & M estimate	$3,000.00
Yearly major lift station rehabilitation allowance	$15,000.00
Yearly manhole rehabilitation allowance	$4,000.00
Total yearly grinder pump impact costs	$72,000.00
No grinder pumps	634
Yearly costs per grinder pump core	$1,356.00
Grinder Pump Impact Fee*	$1,995.00

**Grinder Pump Impact Fee is for the 20-year costs outlined above assuming 4% return on investments and 3% inflation.*