25822

12/28/2005

I am interested in *water and sewer* service to my property located near/on CR352. I hope that the City of Lindsay at some point in the future will be able to provide these services to my property. For this reason I would like to be included in the CCN for the City of Lindsay.

Sincerely,

Signature

Kenneth Krebs
299 CR 352
Gainesville, Texas 76240
(940) 668-8163

10/18/2005

I am interested in *water and sewer* service to my property located near/on CR 446.
I hope that the City of Lindsay at some point in the future will be able to provide these services to my property. For this reason I would like to be included in the CCN for the City of Lindsay.

Sincerely,

Charles Neu
Signature

CHARLES NEU
Name

2104 CR 446
Address

Gainesville, TX 76240
City, State, Zip

940-665-8705
Phone Number

October 17, 2005

I am interested in *water and sewer* service to my property located near/on 926 CR 404. I hope that the City of Lindsay at some point in the future will be able to provide these services to my property. For this reason I would like to be included in the CCN for the City of Lindsay.

Sincerely,

Chris New
Signature

CHRIS NEW
Name

926 CR 404
Address

BAINES VILLE TEXAS 76210
City, State, Zip

940-665-4712
Phone Number

October 12, 2005

I am interested in *water and sewer* service to my property located on County Road 306. I hope that the City of Lindsay at some point in the future will be able to provide these services to my property. For this reason I would like to be included in the CCN for the City of Lindsay.

Sincerely,

Elroy Neu

Elroy Neu
452 CR 306
Gainesville, Texas 76240
940-665-6070

October 12, 2005

I am interested in *water and sewer* service to my property located on Hwy 82. I hope that the City of Lindsay at some point in the future will be able to provide these services to my property. For this reason I would like to be included in the CCN for the City of Lindsay.

Sincerely,

Jeff and Diane Neu
919 East JM Lindsay Blvd.
Gainesville, Texas 76240
940-665-8412

October 17, 2005

I am interested in *water and sewer* service to my property located near/on CR 446. I hope that the City of Lindsay at some point in the future will be able to provide these services to my property. For this reason I would like to be included in the CCN for the City of Lindsay.

Sincerely,

Tommy New
Signature

Tommy New
Name

2074 CR 446
Address

Gainesville Texas 76240
City, State, Zip

940-665-7615
Phone Number

10/18/2005

I am interested in *water and sewer* service to my property located near/on CR 405.
I hope that the City of Lindsay at some point in the future will be able to provide these services to my property. For this reason I would like to be included in the CCN for the City of Lindsay.

Sincerely,

Lawrence Neusch
Signature

LAWRENCE NEUSCH
Name

758 CR 405
Address

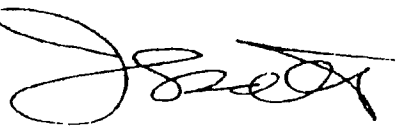
GAINESVILLE, TEXAS 76240
City, State, Zip

940-668-7182
Phone Number

September 15, 2005

I am interested in *water and sewer* service to my property located on FM 1199. I hope that the City of Lindsay at some point in the future will be able to provide these services to my property. For this reason I would like to be included in the CCN for the City of Lindsay.

Sincerely,



James Ott
1094 FM 1199
Gainesville, Texas 76240
940-665-9662

October 17, 2005

I am interested in *water and sewer* service to my property located on CR 407. I hope that the City of Lindsay at some point in the future will be able to provide these services to my property. For this reason I would like to be included in the CCN for the City of Lindsay.

Sincerely,

Henry Popp
329 CR 407
Gainesville, Texas 76240
940-665-6620

10/26/2005

I am interested in *water and sewer* service to my property located near/on FM 1630 & FM 3108
I hope that the City of Lindsay at some point in the future will be able to provide these services to my property. For this reason I would like to be included in the CCN for the City of Lindsay.

Sincerely,

Signature

Hugh Porter
Name

1870 FM 1630
Address

Gainesville Tx 76240
City, State, Zip

(940) 665-6079
Phone Number

10/26/2005

I am interested in *water and sewer* service to my property located near/on 760 FM 3108
I hope that the City of Lindsay at some point in the future will be able to provide these services to my property. For this reason I would like to be included in the CCN for the City of Lindsay.

Sincerely,

Clem Sandmann
Signature

Clem Sandmann
Name

Box Box 103
Address

Lindsay Tex 76250
City, State, Zip

940-668-8236
Phone Number

11/3/2005

I am interested in *water and sewer* service to my property located on FM 3108 and on FM 1200. I hope that the City of Lindsay at some point in the future will be able to provide these services to my property. For this reason I would like to be included in the CCN for the City of Lindsay.

Sincerely,

Donald Sandmann

Signature

Donald Sandmann
1849 FM 1630
Gainesville, Texas 76240
(940) 665-0907

Property
East 3108

10/26/2005

I am interested in *water and sewer* service to my property located near/on [illegible].
I hope that the City of Lindsay at some point in the future will be able to provide these services to my property. For this reason I would like to be included in the CCN for the City of Lindsay.

Sincerely,

Edward Sandmann
Signature

Edward Sandmann
Name

P.O. Box 104
Address

Lindsay Tx 76250
City, State, Zip

940-668-7530
Phone Number

Property on East 3108

September 15, 2005

I am interested in *water and sewer* service to my properties located on FM 3108 and near FM 1200. I hope that the City of Lindsay at some point in the future will be able to provide these services to my property. For this reason I would like to be included in the CCN for the City of Lindsay.

Sincerely,
Frank Sandmann

Frank Sandmann
P.O. Box 62
Lindsay, Texas 76250
940-665-0458

10/18/2005

I am interested in *water and sewer* service to my prope ty located near/on FM 3108, south of city limits. I hope that the City of Lindsay at some point in the future will be able to provide these services to my property. For this reason I would like to be included in tl e CCN for the City of Lindsay.

Sincerely,

Paul Sandmann
Signature

Paul Sandmann
Name

P.O. Box 71
Address

Lindsay TX 76250
City, State, Zip

(940) 668-8229
Phone Number

Copy

East 3108

10/26/2005

I am interested in *water and sewer* service to my property located near/on 933 FM 3108.
I hope that the City of Lindsay at some point in the future will be able to provide these services to my property. For this reason I would like to be included in the CCN for the City of Lindsay.

Sincerely,

Raymond Sandmann
Signature

RAYMOND SANDMANN
Name

BOX 102
Address

LINDSAY, TEXAS 76250
City, State, Zip

940-668-7454
Phone Number

10/26/2005

I am interested in water *and* sewer service to my property located near/on CR 409.
I hope that the City of Lindsay at some point in the future will be able to provide these services to my property. For this reason I would like to be included in the CCN for the City of Lindsay.

Sincerely,

Walter Schmidlkofer
Signature

Walter SchmidlKofer
Name

3175 CR 409
Address

Gainesville Tex 76240
City, State, Zip

940 668 2263
Phone Number

10/26/2005

I am interested in water and sewer service to my property located near/on 3896 CR 422
I hope that the City of Lindsay at some point in the future will be able to provide these services to my property. For this reason I would like to be included in the CCN for the City of Lindsay.

Sincerely,

Weldon Schmidlkofer
Signature

Weldon Schmidlkofer
Name

3896 CR 422
Address

Gainesville TX 76240
City, State, Zip

940-665-2828
Phone Number

10/26/2006

I am interested in water and sewer service to my property located near/on FM 1199 - North Lindsay
I hope that the City of Lindsay at some point in the future will be able to provide these services to my property. For this reason I would like to be included in the CCN for the City of Lindsay.

Sincerely,

Betty A Stoffels
Signature

Charles & Betty Stoffels
Name

3719 FM 1199
Address

Gainesville, TX 76240
City, State, Zip

940-668-8731
Phone Number

10/26/2005

I am interested in *water and sewer* service to my property located near/on CR 432 & CR 409.
I hope that the City of Lindsay at some point in the future will be able to provide these services to my property. For this reason I would like to be included in the CCN for the City of Lindsay.

Sincerely,

Rachel Whysong Schmidlkofer
Signature

Rachel Whysong
Name

404 CR 260
Address

Gainesville Tex 76240
City, State, Zip

940 665 2539
Phone Number

2/16/2006

I am interested in *water and sewer* service to my property located near/on CR 409. I hope that the City of Lindsay at some point in the future will be able to provide these services to my property. For this reason I would like to be included in the CCN for the City of Lindsay.

Sincerely,

Les and Janie Wilson
Signature

Name: Les & Janie Wilson

Address: Box 120

City, State, Zip: Lindsay TX 76250

Phone # 940-665-3891
940-736-4667
940 736-4575

10/31/2005

I am interested in ~~water and sewer~~ service to my property located near/on 3793 FM 1199
I hope that the City of Lindsay at some point in the future will be able to provide these services to my property. For this reason I would like to be included in the CCN for the City of Lindsay.

Sincerely,

Charlotte Winter
Signature

Charlotte Winter
Name

P O Box 194
Address

Lindsay, TX 76250
City, State, Zip

940-668-2003
Phone Number

10/18/2005

I am interested in *water and sewer* service to my property located near/on CR 404.
I hope that the City of Lindsay at some point in the future will be able to provide these services to my property. For this reason I would like to be included in the CCN for the City of Lindsay.

Sincerely,

Alcuin Zimmerer
Signature

Alcuin Zimmerer
Name

11661 CR-404
Address

Gainesville Texas
City, State, Zip

668-8873
Phone Number

APP0404

October 17, 2005

I am interested in *water and sewer* service to my property located on CR 404. I hope that the City of Lindsay at some point in the future will be able to provide these services to my property. For this reason I would like to be included in the CCN for the City of Lindsay.

Sincerely,

Frances Zimmerer

Frances Zimmerer
1376 CR 404
Gainesville, Texas 76240
940-665-9906

September 15, 2005

I am interested in *water and sewer* service to my property located on County Road 404. I hope that the City of Lindsay at some point in the future will be able to provide these services to my property. For this reason I would like to be included in the CCN for the City of Lindsay.

Sincerely,

Larry Zimmerer
1164 CR 404
Gainesville, Texas 76240
940-668-8298

10/26/2005

I am interested in water and sewer service to my property located near/on 1199.
I hope that the City of Lindsay at some point in the future will be able to provide these services to my property. For this reason I would like to be included in the CCN for the City of Lindsay.

Sincerely,

Marie H. Zimmerer
Signature

MARIE H. ZIMMERER
Name

720 - FM 1199
Address

GAINESVILLE, TX 76240
City, State, Zip

940-665-6321
Phone Number

October 17, 2005

I am interested in *water and sewer* service to my property located near/on FM 1199.
I hope that the City of Lindsay at some point in the future will be able to provide these services to my property. For this reason I would like to be included in the CCN for the City of Lindsay.

Sincerely,

Michael Zimmerer
Signature

Michael Zimmerer
Name

1092 FM 1199
Address

Gainesville, Tx. 76240
City, State, Zip

940-668-6210
Phone Number

September 15, 2005

I am interested in *water and sewer* service to my property located on County Road 438. I hope that the City of Lindsay at some point in the future will be able to provide these services to my property. For this reason I would like to be included in the CCN for the City of Lindsay.

Sincerely,

Rudy Zimmerer
3188 CR 438
Lindsay, Texas 76250
940-736-518

27000 55416
15290 15287
26165 8436
15289

4/12/04

I am interested in *water and sewer* service to my property located near/on Fm CR 410 + 1195.
I hope that the City of Lindsay at some point in the future will be able to provide these services to my property. For this reason I would like to be included in the CCN for the City of Lindsay.
I have 5 acres location.

Sincerely,

Tom Zimmerer
Signature

Tom Zimmerer
Name

P.O. Box 217
Address

Lindsay Tx 76250
City, State, Zip

940-665-7813
Phone Number

Date:

I am interested in *water and sewer* service to my property located on CR 438. I hope that my City of Lindsay at some point in the future will be able to provide these services to my property. For this reason I would like to be included in the CCN for the City of Lindsay.

Sincerely, Vincent Zimmerer

Full Name: Vincent Zimmerer
Address: 3522 CR 438
Lindsay, Texas 76252
Phone #: 940-736-2258

3108 LP
Box 863
Gainesville TX 76241-0863

November 8, 2005

Town of Lindsay
Box 153
Lindsay TX 76250

Re: Certificate of Convenience and Necessity (CCN)

Ladies and Gentlemen:

Please be advised that 3108 LP is willing to include its property located at the end of Elm and Pecan streets in the CCN referenced in your October 11, 2005 letter.

Sincerely,

3108 LP by:

JSLP Inc, General Partner

Jacob Bezner

Jacob Bezner, President

15217

10/26/2005

I am interested in *water and sewer* service to my property located near/on CR 404.
I hope that the City of Lindsay at some point in the future will be able to provide these services to my property. For this reason I would like to be included in the CCN for the City of Lindsay.

Sincerely,

Leslie Sandmann
Signature

Leslie Sandmann
Name

761 CR 404
Address

Gainesville, TX 76240
City, State, Zip

(940) 668-6630
Phone Number

U.S. Census Bureau
American FactFinder

T1. Population Estimates [9]
Data Set: 2006 Population Estimates

Note: For information on errors stemming from model error, sampling error, and nonsampling error, see: http://www.census.gov/popest/topics/methodology.

	Lindsay town, Texas
Total Population	
July 1, 2006	1,003
July 1, 2005	957
July 1, 2004	929
July 1, 2003	878
July 1, 2002	854
July 1, 2001	813
July 1, 2000	792
April 1, 2000 (Estimates Base)	788
April 1, 2000 (Census 2000)	788

Source: US Census Bureau, Population Estimates Program
More Tables and Information: Population Estimates Program

Note: The April 1, 2000 estimates base reflects changes to the Census 2000 population resulting from legal boundary updates as of January 1 of the estimates year, other geographic program changes, and Count Question Resolution actions. All geographic boundaries for the July 1, 2006 population estimates series are defined as of January 1, 2006. An "(x)" in the Census 2000 field indicates a locality that was formed or incorporated after Census 2000 or was erroneously omitted from Census 2000. See Geographic Change Notes for additional information on these localities.

T2. Housing Unit Estimates [9]
Data Set: 2006 Population Estimates

NOTE: Estimates for the following geographic area(s) are not available. This table is only available for the United States, States, and Counties.

Geography:

Lindsay town, Texas

APP0460

KDM-8

Study to Determine the Magnitude of, and Reasons for, Chronically Malfunctioning On-Site Sewage Facility Systems in Texas

Funded by:

Texas On-Site Wastewater Treatment Research Council

September 2001

Prepared by:

Reed, Stowe & Yanke, LLC
5806 Mesa Drive, Suite 310
Austin, Texas 78731
(512) 450-0991

RS&Y

REED, STOWE & YANKE
A Limited Liability Company

September 12, 2001

Mr. Warren Samuelson, Executive Secretary
Texas On-Site Wastewater Treatment Research Council
C/O Installer Certification Section, MC-178
P.O. Box 13087
Austin, Texas 78711-3087

RE: Study to Determine the Magnitude of, and Reasons for, Chronically Malfunctioning On-Site Sewage Facility (OSSF) Systems in Texas

Dear Mr. Samuelson:

Reed, Stowe and Yanke, LLC (RS&Y) is pleased to provide the results of the "Study to Determine the Magnitude, and Reasons for, Chronically Malfunctioning On-Site Sewage Facility (OSSF) Systems in Texas" to the Texas On-Site Wastewater Treatment Research Council (Council).

Based on the results of the statewide survey administered for this project, the number of reported chronically malfunctioning OSSFs in the State is approximately 148,573, which represents approximately 13% of the OSSF systems represented by the survey results. These results indicate that there is a potentially serious threat to human health and the environment due to the large number of chronically malfunctioning OSSFs in Texas. As a part of this study, RS&Y evaluated reasons for chronically malfunctioning OSSFs in Texas. Several of the key reasons for malfunction include the following:

- OSSF systems that are older and/or pre-regulatory tend to be problematic and have a higher malfunction rate than newer OSSF systems. The reasons for this high rate of malfunction include, but are not limited to; installation in improper soil types, installation in an undersized lot, system is undersized for current uses, and improper operation and maintenance.
- Since the development of regulations, other types of problems related to OSSFs have emerged. These problems are typically related to the need for on-going maintenance, which is a requirement of many of the newer systems.
- Factors that contribute to malfunctions frequently include a **lack** of (1) public education programs for OSSF owners, (2) effective enforcement programs, and (3) records about existing OSSF systems.

Developing solutions to the problems presented by malfunctioning OSSFs is a significant challenge facing the State of Texas. Meeting this challenge will require the replacement of many OSSFs in the State and the development and implementation of more effective education, management and enforcement programs by local authorized agents and the TNRCC. Should you have any questions regarding the content of this study, please contact Mr. Scott Pasternak at (512) 450-0991.

Sincerely,

Reed, Stowe & Yanke, LLC

Reed, Stowe and Yanke, LLC

5806 Mesa Drive, Suite 310 • Austin, TX 78731 • P (512) 450-0991 • F (512) 450-0515

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EXECUTIVE SUMMARY

The State of Texas contains approximately 1.5 million households that rely upon on-site sewage facility (OSSF) systems for wastewater disposal and the numbers are increasing each year. Approximately 55,052 OSSF systems were installed in Texas in 1999, and approximately 49,616 systems were installed in 2000. Unlike households connected to centralized systems, households with OSSF systems are required to have a general understanding of the operation and maintenance needs of the system in order to ensure that it functions properly.

When an OSSF system is not functioning properly, it cannot only become an inconvenience for the homeowner, but it can create threats to public health and the environment. This threat to public health can reach beyond the individual household and extend to the community at large. Recent research completed by the United States Environmental Protection Agency (U.S. EPA) identified a number of public health and environmental problems related to the malfunction of OSSFs.[1] Effluent from malfunctioning OSSF systems can provide a medium for the transmission of disease. For example, the U.S. EPA has estimated that approximately 169,000 viral and 34,000 bacterial illnesses occur each year as the result of drinking contaminated groundwater. Malfunctioning OSSFs have been identified as a potential source of this contamination. Within the context of the natural environment, malfunctioning OSSFs have also been considered a primary reason for reduced harvests in many shellfish growing areas.

Project Overview

In 2000, the Texas On-Site Wastewater Treatment Research Council (Council) determined that there was a need to study the magnitude of, and reasons for, chronically malfunctioning OSSFs in the State of Texas. Given the large size of Texas and the various soil types and climate conditions within the state, the Council decided to approach the research from a regional perspective. Reed, Stowe & Yanke, LLC (RS&Y) was retained by the Council in October of 2000 to research the issues and factors that contribute to OSSF malfunction, as well as determine the extent of the problem in the various regions of Texas.

After reviewing the existing literature and the available data on OSSF systems, RS&Y determined that the Council's project goals would best be attained through the administration of a survey to the Designated Representatives across Texas. It was decided that Designated Representatives were the appropriate survey population due to their comprehensive knowledge of issues related to OSSF malfunctions within their respective jurisdictions. The survey contained questions that were designed to ascertain the reasons for chronically malfunctioning OSSF systems and covered topics such as

[1] *EPA Guidelines for Management of Onsite/Decentralized Wastewater Systems (Draft).* United States Environmental Protection Agency. September 26, 2000. Pages 1-2.

system design, operation and maintenance, OSSF owner education, effective treatment technologies, soil type, and climate conditions. The survey was mailed to 278 Designated Representatives in January of 2001.

Figure ES.1 On-Site Wastewater Regions of Texas

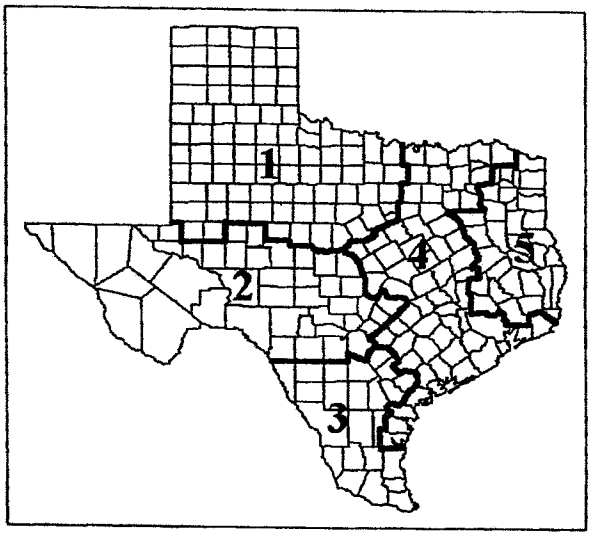
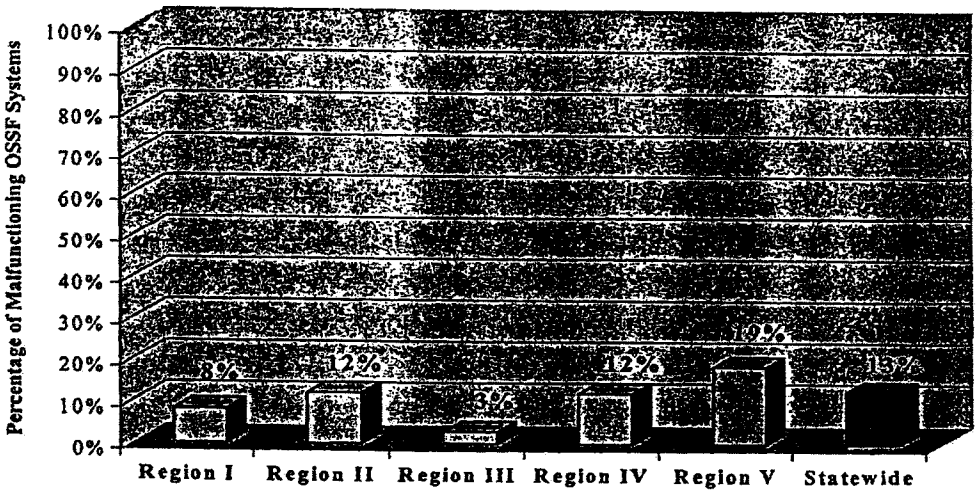


Chart ES.1 Percentage of Chronically Malfunctioning OSSF Systems

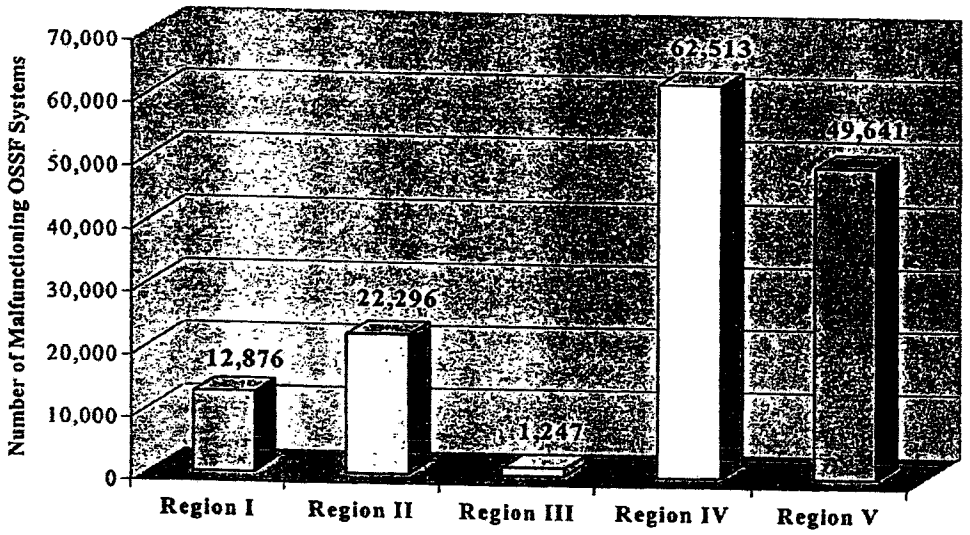


The statewide survey response rate, based on the number of completed surveys returned, was 64%. The survey results were compiled and analyzed on a regional basis and these

regions are presented in Figure ES.1. The analyzed survey results were successful in fulfilling the project goals, and will be an important resource for OSSF professionals and policymakers alike. Important trends in the factors that contribute to OSSF malfunction were revealed through the survey results, as well as data that offers insight into the number of chronically malfunctioning OSSF systems in the State of Texas.

Chart ES.1 shows the percentage of OSSF systems that were reported to malfunction chronically in each region of the State. Statewide, approximately 13% of the OSSF systems were reported to be chronically malfunctioning. Chart ES.2 shows the approximate number of chronically malfunctioning OSSF systems by region. The total number of chronically malfunctioning systems reported through the survey results in the State was approximately 148,573.

Chart ES.2 Total Number of Chronically Malfunctioning Systems per Region



The actual total number of malfunctioning OSSF systems in Texas is certain to be higher, as the survey's response rate was less than 100%. However, the rate of OSSF malfunction for the entire State is still unknown and cannot be projected based on survey responses. The project team determined that it would not be statistically valid to use the regional rates of chronic OSSF malfunction for the jurisdictions that responded to the survey, and extrapolate those figures to determine the rate of malfunction for all OSSF systems across the State. Although it might be a useful exercise for the purposes of antidotal discussion, it would not necessarily be representative of the opinions and situations in the remaining jurisdictions.

Document Format

This document is divided into five sections. Section 1 describes the methodology used to determine the type of research instrument used in the project, the process of creating the survey instrument, the survey distribution process, and the limitations of the survey. This section also illustrates the regional approach used to analyze the survey results, including a map that depicts the State of Texas divided into the five regions. A copy of the survey questionnaire is located in Appendix A.

Section 2 presents the regional analyses of the survey results. The survey results are presented from Region I through Region V, with the analyzed data discussed in the order in which it was listed on the actual survey questionnaire. The survey results are described in a text format as well as in various tables that illustrate the raw data results and percentage ratios. Key findings from each region are summarized in the next section, "Key Findings Summary" of the Executive Summary.

Section 3 of this report presents a regional comparison of the survey results from the five regions of the State. This section compares and contrasts the significant factors in OSSF malfunction reported in the survey results from each region. Section 4 discusses in detail the major policy issues and key findings that resulted from the survey analysis presented in Section 2. These policy issues are summarized on page xi of the Executive Summary.

The recommendations of the report are presented in Section 5. In this section, the project team has developed a set of recommendations based on the policy issues discussed in Section 4. The project team would like to emphasize that the recommendations presented in this discussion are not intended to provide a comprehensive resolution to all problems effecting OSSF systems. The purpose of these recommendations is to highlight actions that the Council could take based on the findings of this study. These recommendations have also been developed to help identify and prioritize future Council research projects based on the major reasons for malfunctioning OSSFs.

Key Findings Summary

Region I: Key Findings Summary

- Region I reported that approximately 8% of the OSSF systems in the reporting jurisdictions were chronically malfunctioning.
- The age of the OSSF system was ranked as the highest contributor to malfunction. Pre-regulatory "grandfathered" systems were found to be a severe contributor to malfunction by 51% of survey respondents and a moderate contributor by 29%.
- Operation and maintenance issues were ranked as the second highest contributor to malfunction. Problems with operation and maintenance practices were reported to

severely contribute to OSSF malfunction by 34% of the respondents and to moderately contribute by 34%.

- The lack of education for OSSF owners was reported to contribute severely to OSSF malfunction by 34% of the respondents and moderately contribute by 31%. Additionally, 60% of the respondents in Region I reported that OSSF owners do not receive sufficient information about how to properly operate their system.
- Region I did not report significant OSSF problems due to climate or a high water tables and septic tanks/leaching chambers were reported to function well in the region.

Region II: Key Findings Summary

- Region II reported that approximately 12% of the OSSF systems in the reporting jurisdictions were chronically malfunctioning.
- The age of the OSSF system was ranked as the highest contributor to malfunction. Pre-regulatory "grandfathered" systems were found to be a severe contributor to malfunction by 22% of the survey respondents and a moderate contributor by 37%.
- The factors that contribute to OSSF malfunction in Region II were varied and were generally reported as being less severe than in other regions of the State. Areas of concern for many respondents included: a lack of education for OSSF owners, improper operation and maintenance, and problems with soils, such as tightly-packed clay soils that do not allow for proper leaching and fractured limestone soils that allow sewage to flow directly into the ground.

Region III: Key Findings Summary

- Region III reported that approximately 3% of the OSSF systems in the reporting jurisdictions tend to chronically malfunction. This is the lowest reported rate of OSSF malfunction for any region in the State.
- Region III had an unusually low response rate of 44% and the returned surveys only represent approximately 32% of the total number of OSSF systems in the region. Due to this low regional response rate and the lower OSSF representation, the results from this regional analysis may not be representative of the OSSF issues in the entire region, nor can they be assumed to represent the opinions of the majority of Designated Representatives in the region.
- According to the Designated Representatives that responded to the survey, the age of the OSSF system was ranked as the highest contributor to malfunction. Pre-regulatory "grandfathered" systems were found to be a severe contributor to malfunction by 50% of the survey respondents and a moderate contributor by 25%.
- Improper system design ranked as the second highest contributor to malfunction and 38% of the respondents reported that it severely contributes to malfunction, while

19% stated it was a moderate contributor. Examples of system design issues reported in the region include OSSF systems that are too small for the sewage load from the facility and lot sizes and/or drainfields that are too small.

Region IV: Key Findings Summary

- Region IV reported that approximately 12% of the OSSF systems in the reporting jurisdictions were chronically malfunctioning.
- Soils were ranked as the highest contributor to OSSF malfunction in Region IV. Soils were found to severely contribute to malfunction by 42% of the respondents and to moderately contribute by 36%. Specifically, tightly-packed clay soils that do not allow for proper leaching were reported to be severe contributors to malfunction by 51% of the respondents and a moderate contributor by 22%.
- The age of the OSSF system was ranked as the second highest contributor to malfunction. Pre-regulatory "grandfathered" systems were found to be a severe contributor to malfunction by 46% of the survey respondents and a moderate contributor by 32%.
- Lack of education for OSSF owners was reported to contribute severely to malfunction by 28% of the respondents and moderately contribute by 46%. Additionally, 85% of the respondents in Region IV stated that OSSF owners do not receive sufficient information about how to properly operate their system.
- Operation and maintenance was generally reported to be a moderate contributor to malfunction in Region IV. A total of 15% of the respondents reported that operation and maintenance was a severe contributor to malfunction while 51% reported it was a moderate contributor. Specifically, failure to renew maintenance contracts and failure to add the proper disinfectant to the system were identified as the two main contributors to malfunction under the operation and maintenance category.

Region V: Key Findings Summary

- Region V reported that approximately 19% of the OSSF systems in the reporting jurisdictions were chronically malfunctioning. This is the highest reported rate of malfunction for any region.
- Soil was ranked as the highest contributor to malfunction, with 66% of the respondents reporting severe contribution to malfunction, and 14% reporting moderate contribution. Tightly-packed clay soils were reported to contribute severely to malfunction by 69% of the respondents and moderately by 24%.
- High water tables were ranked as the second highest contributor to malfunction and were reported to severely contribute to malfunction by 34% of the respondents and moderately contribute to malfunction by 31%.

- The age of the OSSF system was ranked as the third highest contributor to malfunction. Pre-regulatory "grandfathered" systems were found to be a severe contributor to malfunction by 55% of the survey respondents and a moderate contributor by 31%.
- Lack of education for OSSF owners was found to severely contribute to malfunction by 34% of the respondents and moderately contribute to malfunction by 45%. Additionally, 79% of respondents in Region V stated that OSSF owners do not receive sufficient information about how to properly operate their system.
- Failure to renew maintenance contracts was reported to be a severe contributor to malfunction by 48% of the respondents and a moderate contributor by 45%. A failure to add the proper disinfectant to the system was reported to be a severe contributor by 38% of the respondents and a moderate contributor by 45%. These factors were the two main contributors to malfunction under the operation and maintenance category.
- One hundred percent of the respondents reported that aerobic system treatment technologies function well and 93% reported that surface irrigation systems function well.

Synopsis of Policy Issues

Issue 1: Malfunctioning OSSFs are a significant problem in Texas based on the results of the survey. In the State of Texas, there are approximately 148,573 chronically malfunctioning systems, which represents about 13% of all OSSFs.

Issue 2: OSSF systems installed in improper soil classes was the factor that had the highest impact on OSSF system malfunction in Region IV and Region V.

Issue 3: Malfunctions related to system age and "grandfathered" systems was the category that consistently ranked as having the highest impact on the malfunction of OSSF systems in Region I, Region II, and Region III. The age of the OSSF systems was ranked as the second highest factor in Region IV and the third highest factor in Region V. The age of OSSF systems is also affected by several other factors, as many older systems were installed prior to the development of regulations.

Issue 4: System operation and maintenance issues related to surface irrigation/aerobic systems, such as a lack of maintenance contracts and improper addition of disinfectant to the OSSF system, were the key reasons for malfunction in Region IV and Region V.

Issue 5: A need for more education for OSSF system owners is a key issue. Approximately 73% of responding Designated Representatives believe that OSSF owners are not receiving adequate education regarding their systems.

The resource guide should be developed in such a manner that the Designated Representatives can use individual sections independent of information from other sections. The resource guide should also include specific recommendations on steps that could be taken to implement each topic. Additionally, the recommendations should be based upon case studies of other Texas communities that have effectively developed and implemented programs to address various OSSF problems.

Recommendation 4: Conduct Further Regional Research

In order obtain an understanding of the magnitude of, and reasons for, malfunctioning OSSF systems in Region III, which includes the area of South Texas know as the Lower Rio Grande Valley, the project team recommends that the Council fund additional research in this area of the State. This research is needed because the survey response rate for this region was significantly lower than the response rates for the other four regions of the State. This research would ideally build from the research completed through this study.

This future research could be conducted through a combination of case studies, interviews and/or surveys. This additional research could be especially helpful in determining potential infrastructure or other resource needs in this area of the State. Information gathered through the additional research would be valuable and useful for Region III since there are several state and federal programs that can provide financial assistance for water and wastewater infrastructure problems in the border region.

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DIRECT TESTIMONY

OF

JACK E. STOWE

ON BEHALF OF

THE CITY OF LINDSAY

JUNE 9, 2008

LINDSAY EXHIBIT APP EX. 4

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