Septic Systems / OSSFs
A Nuisance or an Asset?

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Texas A&M AgriLife Extension and Research
Department of Biological and Agricultural Engineering
Agenda

- Septic Systems / OSSFs 101;
- OSSFs Types/Choices and Trends;
- Rules/Permitting Entities (Authorized Agents);
- OSSFs a Nuisance or an Asset?;
- TAMU Education, Training, and Research Programs; and
- Open Discussion.
Onsite wastewater treatment and disposal systems for homes and businesses in areas where connection to a centralized sewer and treatment system is NOT available;

- Most common Pretreatment = Septic Tank/ATU; and
- Most common Final Treatment and Disposal = Drainfield/Spray.
Trend in OSSF System Types in Texas

This information was compiled from OARS data from TCEQ.
### Selecting and permitting

Bruce Lelicar  
Texas A&M University System  
Texas Agricultural Extension  

**AgriLife Publication B-6077 (S)**

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#### On-site wastewater treatment systems

- **Soil conditions**
  - **Soil type**: I, II, III
  - **Distribution systems**:
    - Standard drain field
    - Low-pressure distribution
    - Subsurface drip distribution
    - Spray distribution
    - Mound system
    - ET bed
    - Soil substitution drain field
    - Pumped effluent drain field

#### Groundwater depth below application depth

- **Soil surface slope**
  - Over 30% or complex slopes
  - Less than 30% or complex slopes

#### Soil type

<table>
<thead>
<tr>
<th>Soil type</th>
<th>Standard drain field</th>
<th>Low-pressure distribution</th>
<th>Subsurface drip distribution</th>
<th>Spray distribution</th>
<th>Mound system</th>
<th>ET bed</th>
<th>Soil substitution drain field</th>
<th>Pumped effluent drain field</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ia</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes (lined only)</td>
<td>No</td>
</tr>
<tr>
<td>Ib</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>II</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>III</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>IV</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
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</tbody>
</table>

#### Depth of good soil (type I, II, III) below application depth

<table>
<thead>
<tr>
<th>Depth of good soil</th>
<th>Standard drain field</th>
<th>Low-pressure distribution</th>
<th>Subsurface drip distribution</th>
<th>Spray distribution</th>
<th>Mound system</th>
<th>ET bed</th>
<th>Soil substitution drain field</th>
<th>Pumped effluent drain field</th>
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<tbody>
<tr>
<td>2 or more feet</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Less than 1 foot</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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http://ossf.tamu.edu/educational-materials-2/
# NCTCOG – OSSF Permitting Maze

**Search Results**

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<th>Authorized Agent</th>
<th>Area Served</th>
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<td>DENTON COUNTY AUTHORIZED AGENT</td>
<td>Denton County</td>
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<tr>
<td>CITY OF DENTON AUTHORIZED AGENT</td>
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<tr>
<td>TOWN OF FLOWER MOUND AUTHORIZED AGENT</td>
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<tr>
<td>CITY OF ARGYLE AUTHORIZED AGENT</td>
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<td>TOWN OF LITTLE Elm AUTHORIZED AGENT</td>
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<tr>
<td>TOWN OF BARTONVILLE AUTHORIZED AGENT</td>
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<tr>
<td>TOWN OF HICKORY CREEK AUTHORIZED AGENT</td>
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</tr>
<tr>
<td>TOWN OF SHADY SHORES AUTHORIZED AGENT</td>
<td>Town of Shady Shores</td>
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<tr>
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<td>CITY OF Krum AUTHORIZED AGENT</td>
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<tr>
<td>TOWN OF DOUBLE OAK AUTHORIZED AGENT</td>
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<tr>
<td>CITY OF FRISCO AUTHORIZED AGENT</td>
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<td>TOWN OF CROSS ROADS AUTHORIZED AGENT</td>
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<td>CITY OF OAK POINT AUTHORIZED AGENT</td>
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<td>TOWN OF FORSTER AUTHORIZED AGENT</td>
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<td>TOWN OF DISH AUTHORIZED AGENT</td>
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<td>REGION 04 - NW METROPOLITAN</td>
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[http://www.nctcog.org/regional_map.asp](http://www.nctcog.org/regional_map.asp)  
NCTCOG – OSSF Permitting Maze

OSSF Count then and now…

Number of OSSF
As of 1990 1,318,449

Number of OSSF by County
As of 2015 2,199,287

http://ossf.tamu.edu/test-map/
OSSF an Asset or a Nuisance...

Septic tank drainfield
A conventional OSSF
OSSF an Asset or a Nuisance...
OSSF an Asset or a Nuisance...

ATU and Drip field
A engineered OSSF
OSSF an Asset or a Nuisance...

ATU and Spray field
Very popular in TX...
Improper design (miss-fit for a site and/or for an user);
Poor installation;
Inadequate or no maintenance.
OSSFs: On-Site Sewage Facilities Program

We offer services in the following areas:

- **Education & Training** – homeowners, licensed professionals, and policy makers; in-person and e-learning;

- **Research & Demonstration** – center for bench and field scale research; performance testing, and demonstration;

- **Inventory & Mapping** – OSSF count and moving towards Geolocation with permit and operation information…. 
Education & outreach: Workshops

- Intro to Septic Systems
  - 2 hour workshop
  - How to live with a septic system
  - PowerPoint with visual aids

- Homeowner Maintenance of ATUs
  - 6 hour class
  - Manual: “Checking my Aerobic System”
Continuing Education Units (CEUs) Programs

- Overview of Advanced WW Treatment Systems
  - 8 hour workshop
  - Treatment, Disposal, and Reuse Technologies
  - PowerPoint with video and other visual aids
  - Tour of Training Center
- “High Strength” Class
  - 16 hour class
Hands-on Education, Research, and Demonstration Center @ RELLIS Campus
Hands-on Education, Research, and Demonstration Center @ RELLIS Campus
TAMU – OSSF Team Contacts

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THANK YOU.