

Michigan Local Health Department Failed Sewage System Evaluations



January 13, 2011

History

- In May 1995 the Michigan Association of Local Environmental Health Administrators concluded, “A Minimum Program Requirement (MPR) is recommended to address the assurance of efforts to monitor the operational effectiveness and maintenance of on-site sewage systems...”
- Joint discussions between the Michigan Department of Environmental Quality (DEQ) and Local Health Department (LHD) representatives resulted in an Operation and Maintenance (O & M) MPR being added effective October 1, 1996

Original Requirement

- O & M evaluations comprised of a minimum of ten (10) percent of the number of on-site sewage permits issued the previous year.
- The second accreditation indicator pertained to the approval of replacement system permits where the system has failed, including , "...retrievable documentation of the age (if available), design, site conditions, dates of any previous repairs (if available), and any other pertinent data allowing for assessment of probable reason for failure and relationship to program effectiveness."

2004 through 2006

- Elimination of the requirement for O & M evaluations

2006 through 2008

- Modified to eliminate the requirement for an interpretive report and thus only required an annual summary of failed system data.

2009 to present

- An entirely new process for collection and reporting failed system data was initiated. The indicator now required uniform collection and submittal of failed system data by all LHDs to DEQ on a calendar year basis beginning January 2009
- The DEQ committed to generating a statewide summary report.



Section VII: On-Site Sewage Treatment Management

Date: _____

MDEQ Failed System Data Collection Form

Township: _____

Address: _____

Residential

<2 bedrooms 2 bedrooms 3 bedrooms 4 bedrooms >4 bedrooms

Commercial Estimated Flows _____

Tank Size - Total Gallons:

<1,000 1,000 – 1,500 >1,500 – 2,000 >2,000 – 3,000
 >3,000 Unknown

System Design:

- Gravity Bed Dosed Bed Pressure Dosed Bed
- Gravity Trenches Dosed Trenches Pressure Dosed Trenches
- Gravity Mound Dosed Mound Pressure Dosed Mound
- Chambers Drywells Other _____
- Unknown
- Advanced Treatment Unit (Treatment Unit Name: _____)

System Age: _____ Unknown

Soil Texture:

- Coarse Sand, Medium Sand Fine sand, Loamy sand Sandy loam
- Loam, Sandy clay loam Clay loam, Silt loam Clay, Silt
- Organic soil, Fill soil

Seasonal High Water Table: _____ inches below grade Not present

For technical assistance, please contact Ric Falardeau at 517-241-1345 or falardeaur@michigan.gov
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Section VII: On-Site Sewage Treatment Management

Size: Bed _____ ft² Trenches _____ bottom area ft² Unknown

Most Probable cause(s) of failure:

- Septic Tank Failure Infrequent tank pumping Pipe filled with solids
- Damaged/collapsed piping Hydraulic Overload System Undersized
- Insufficient isolation to water table Root intrusion Installation error
- Unsuitable Fill Dirty stone Excess cover System Age
- Lack of Maintenance Unknown
- Other: _____

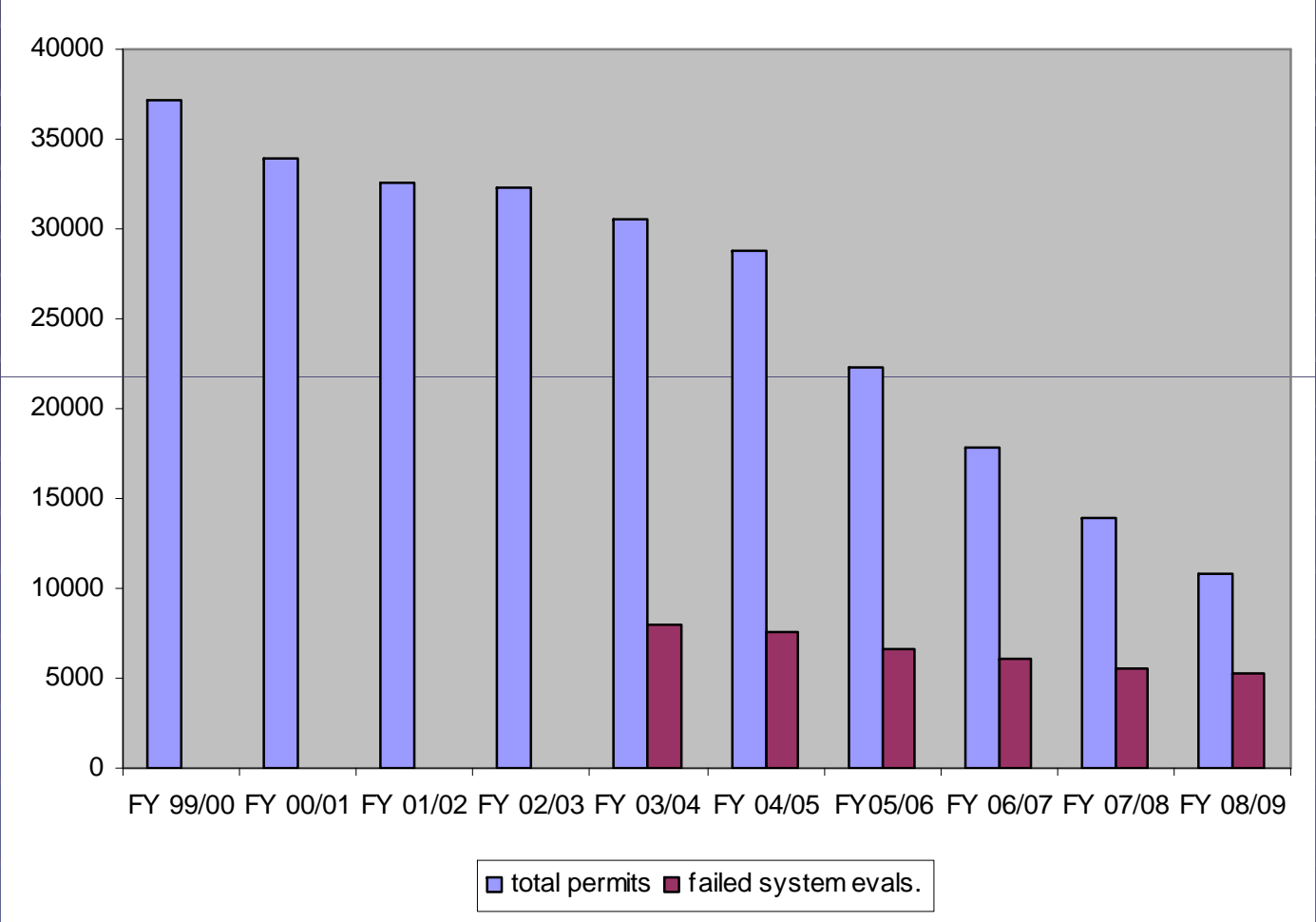
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Michigan 2009 Statewide Failed Sewage System Evaluation Summary Report

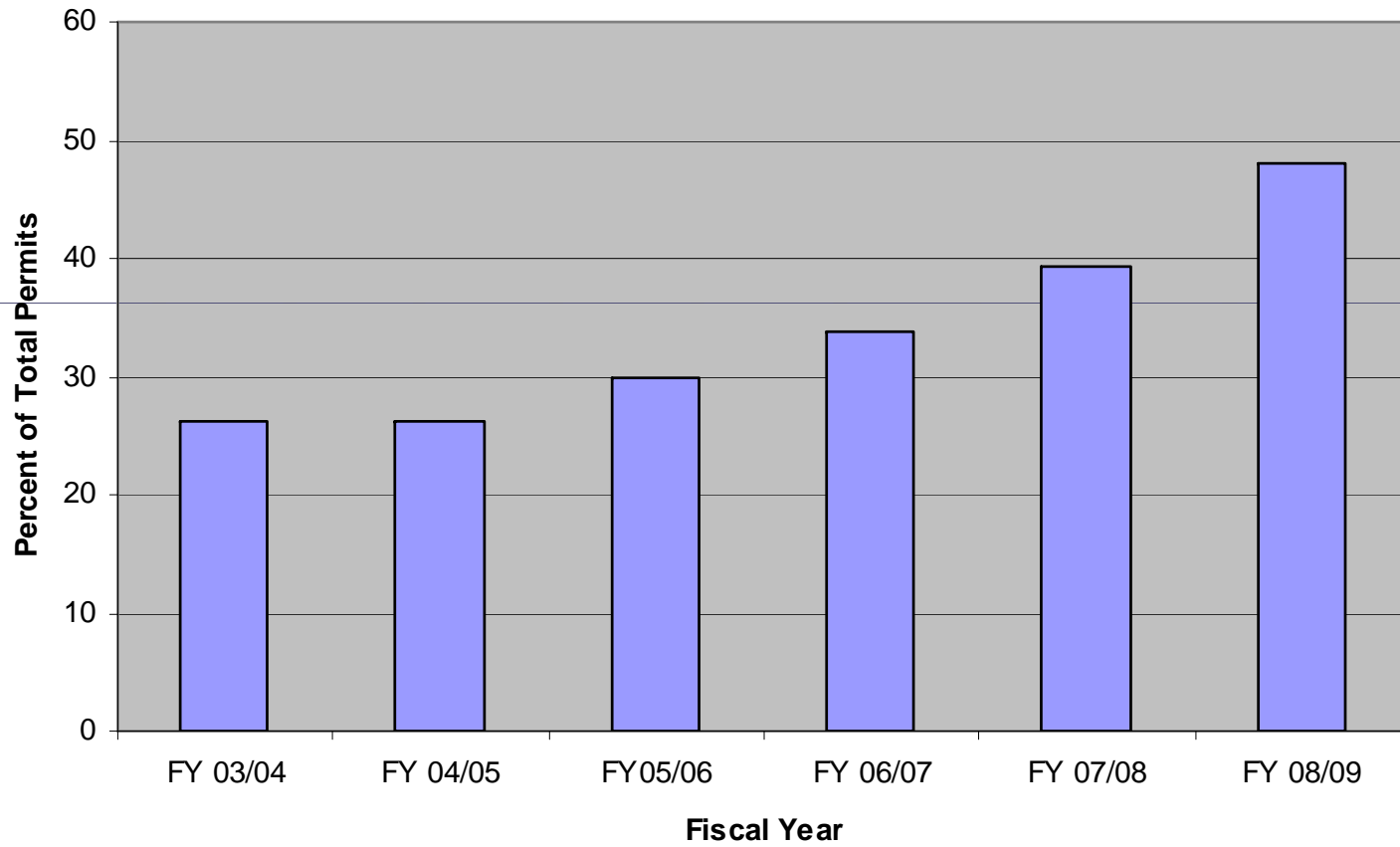


July 2010

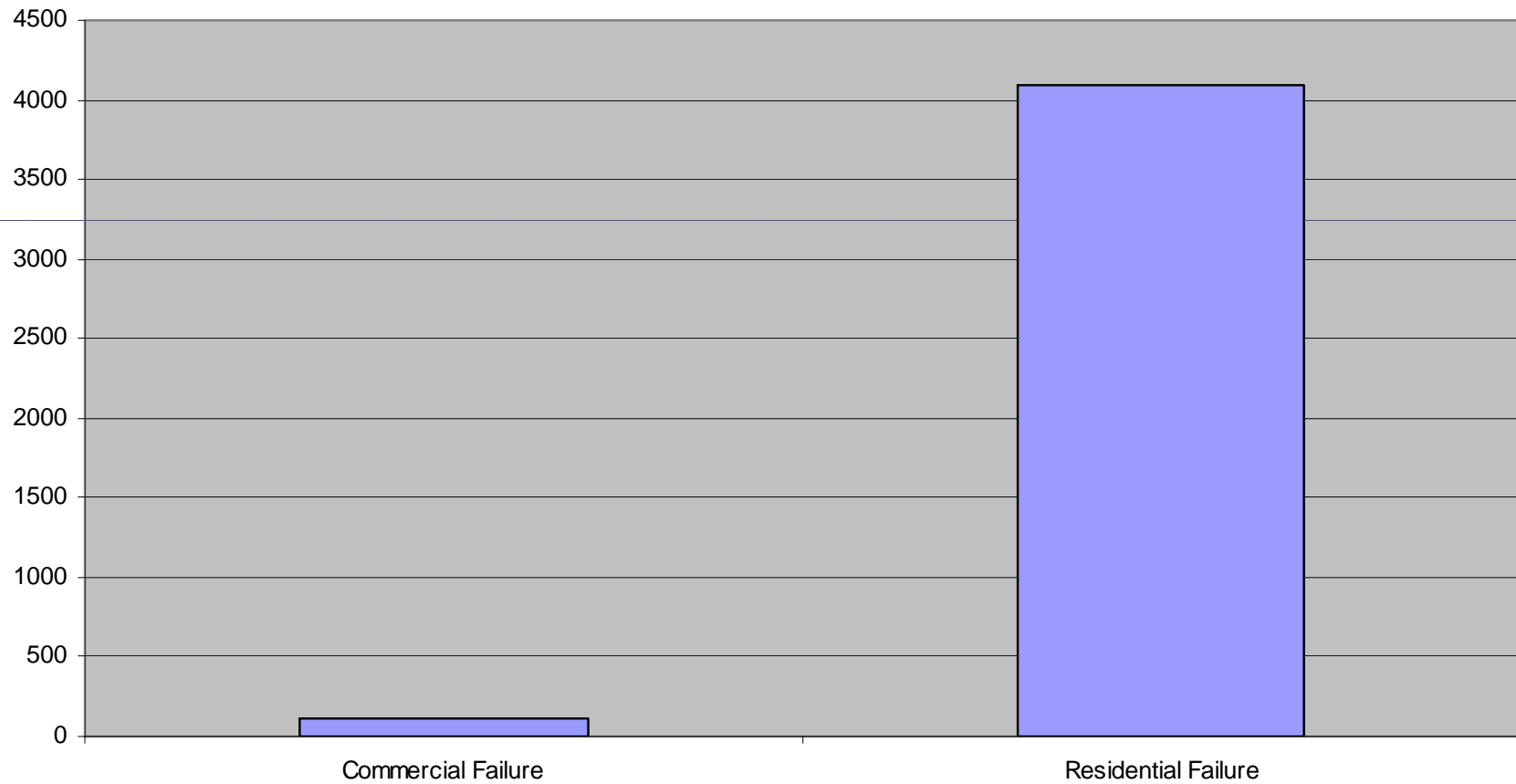




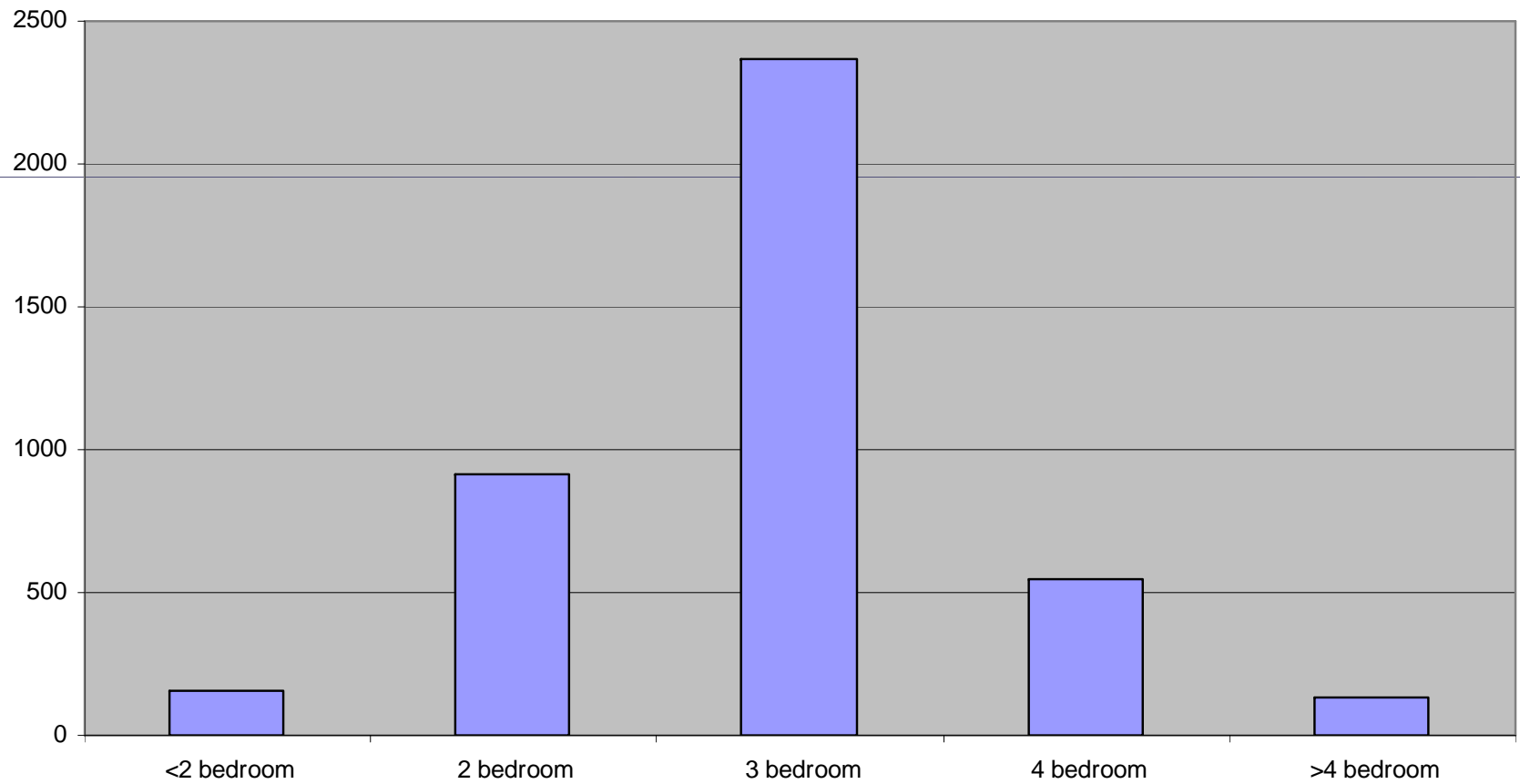
**Failed System Evaluations
% of Total Permits**



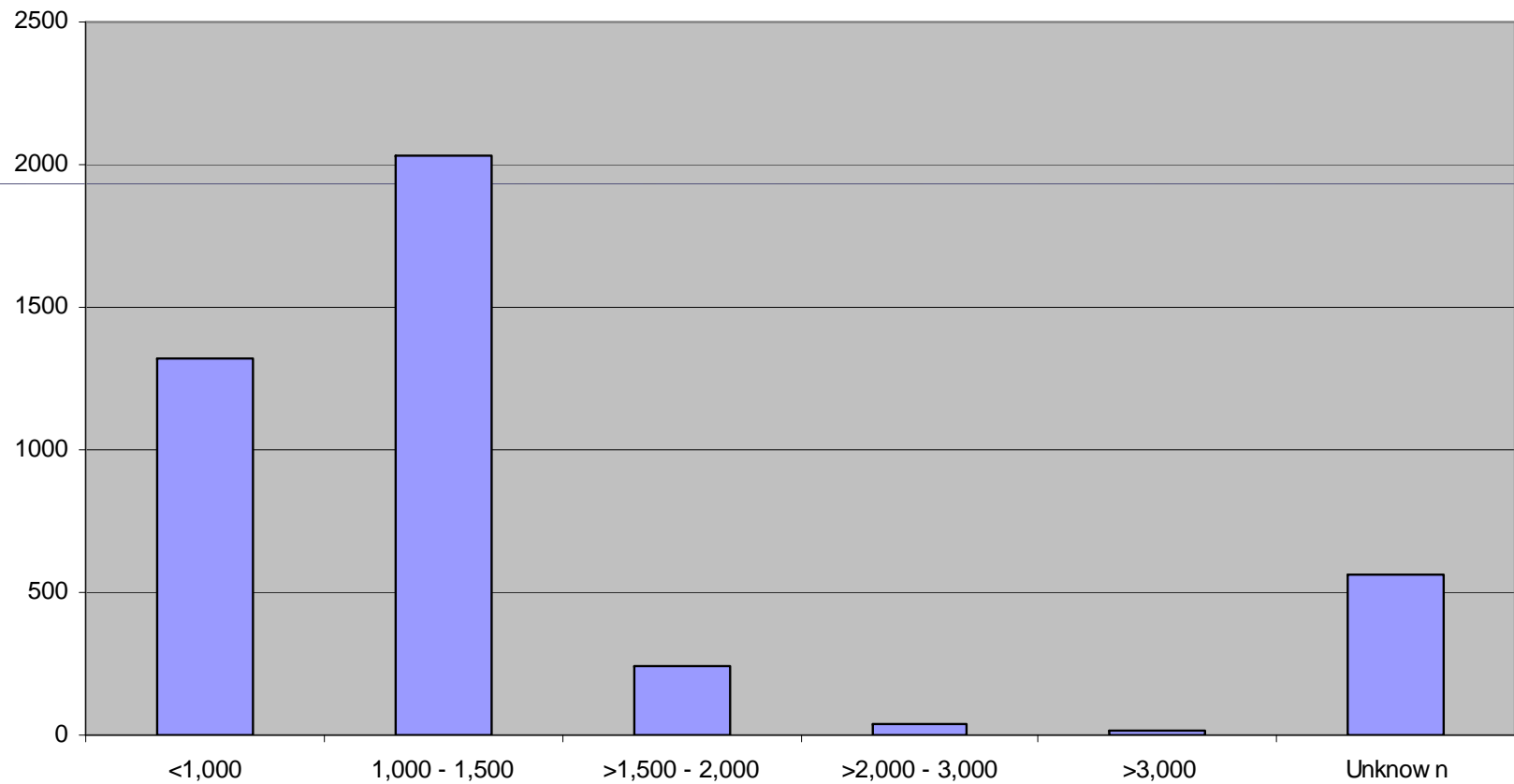
TYPES OF FAILURES



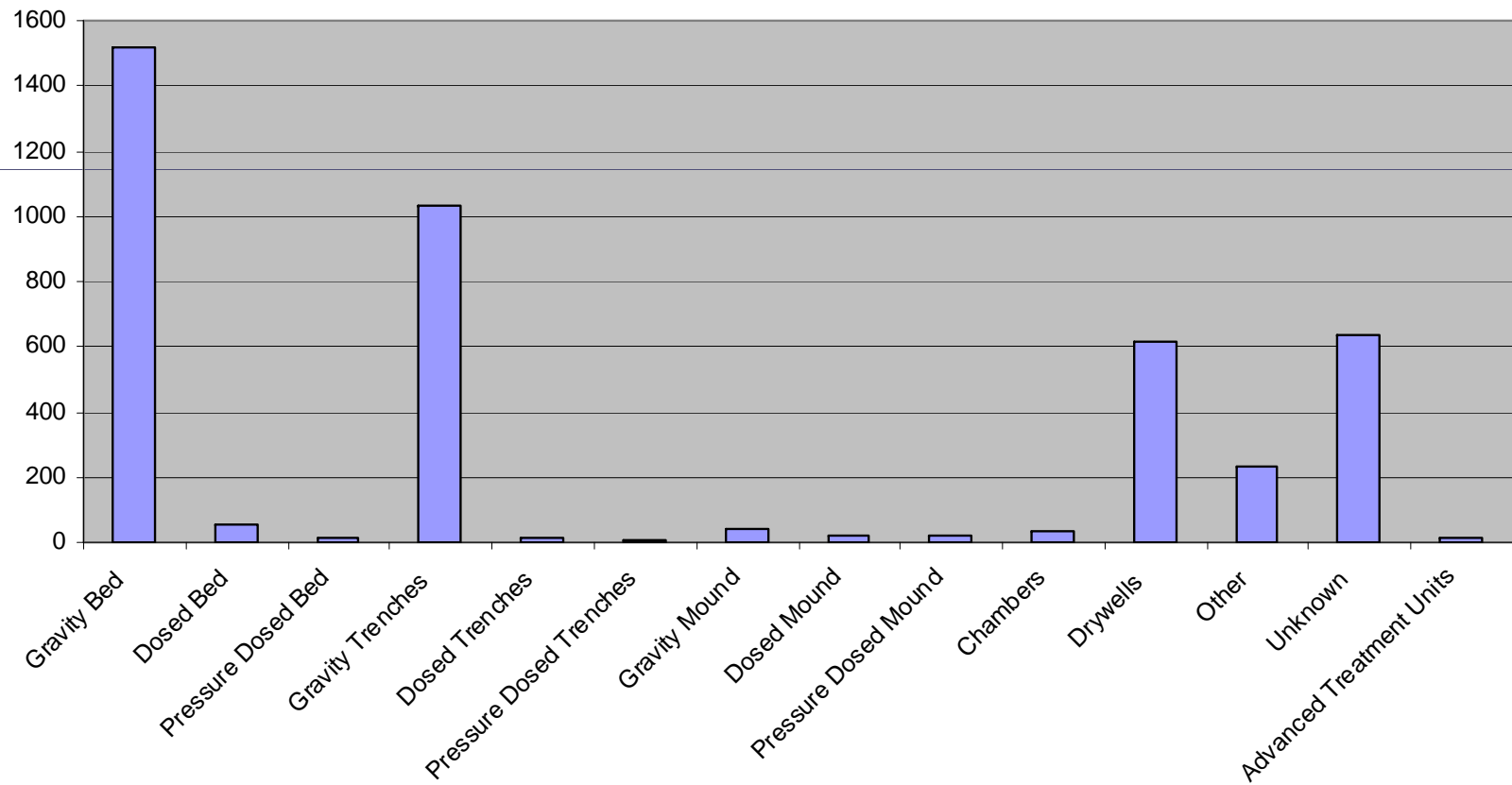
RESIDENTIAL WATER USE



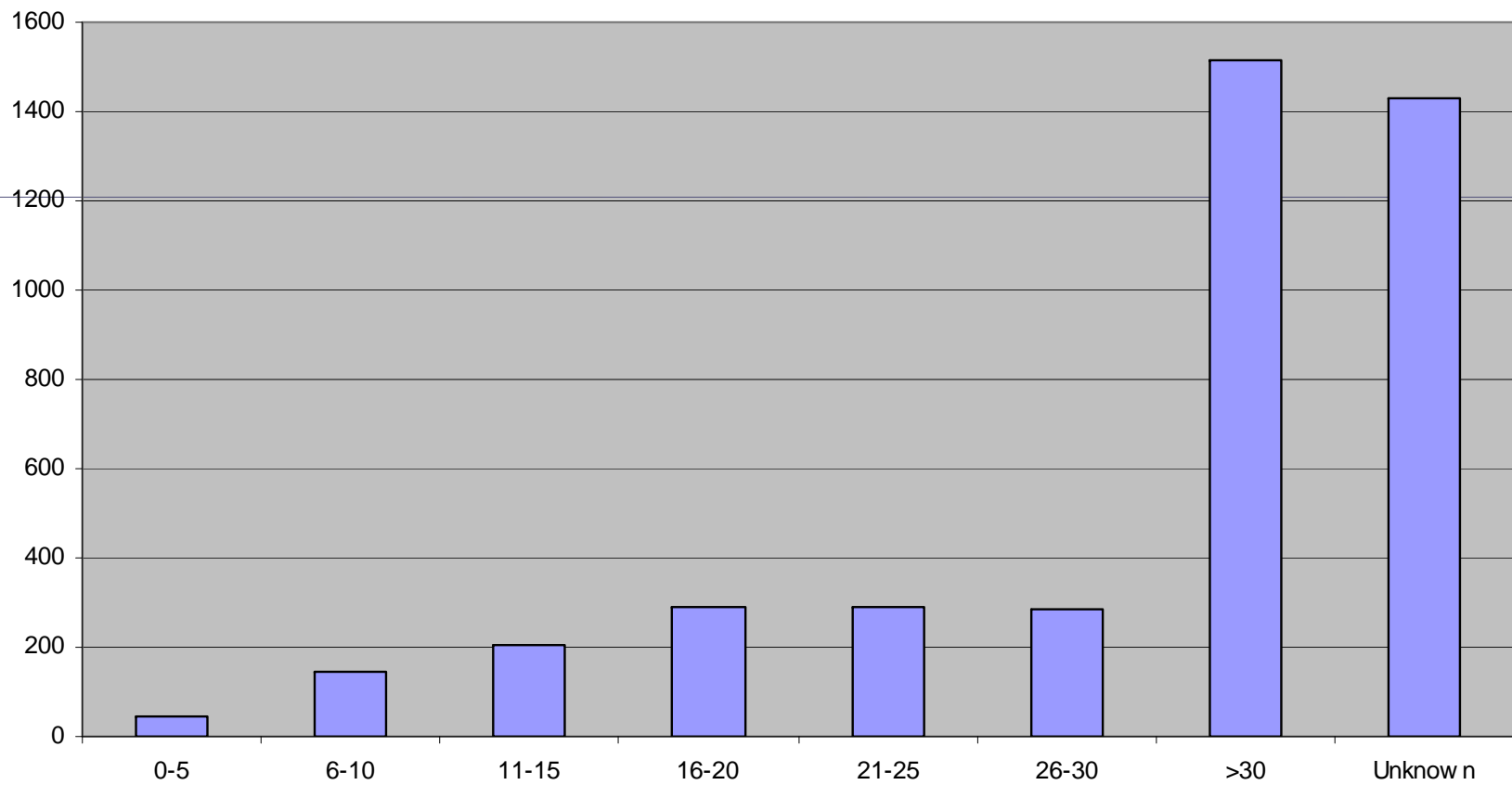
TANK SIZE – TOTAL GALLONS



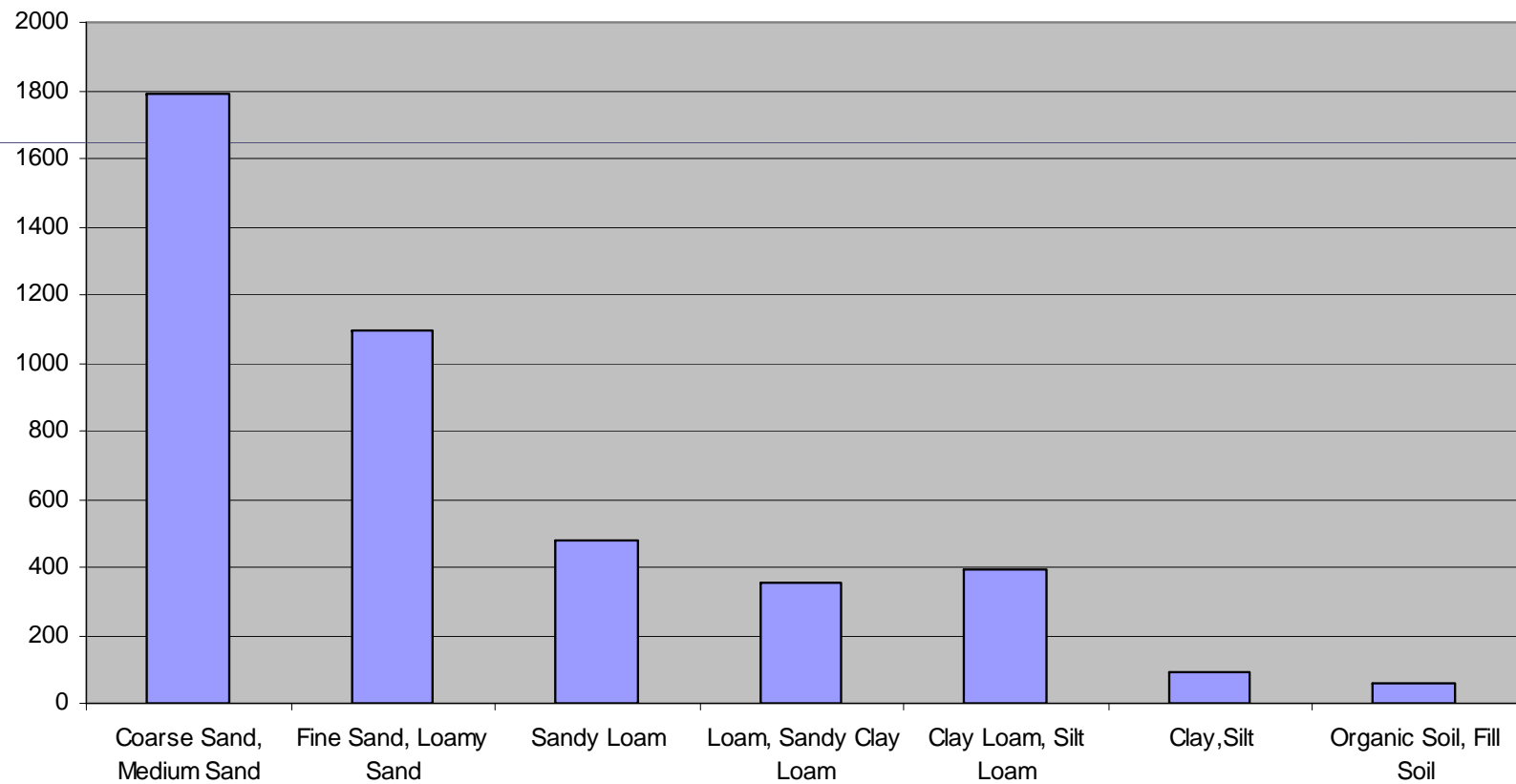
SYSTEM DESIGN



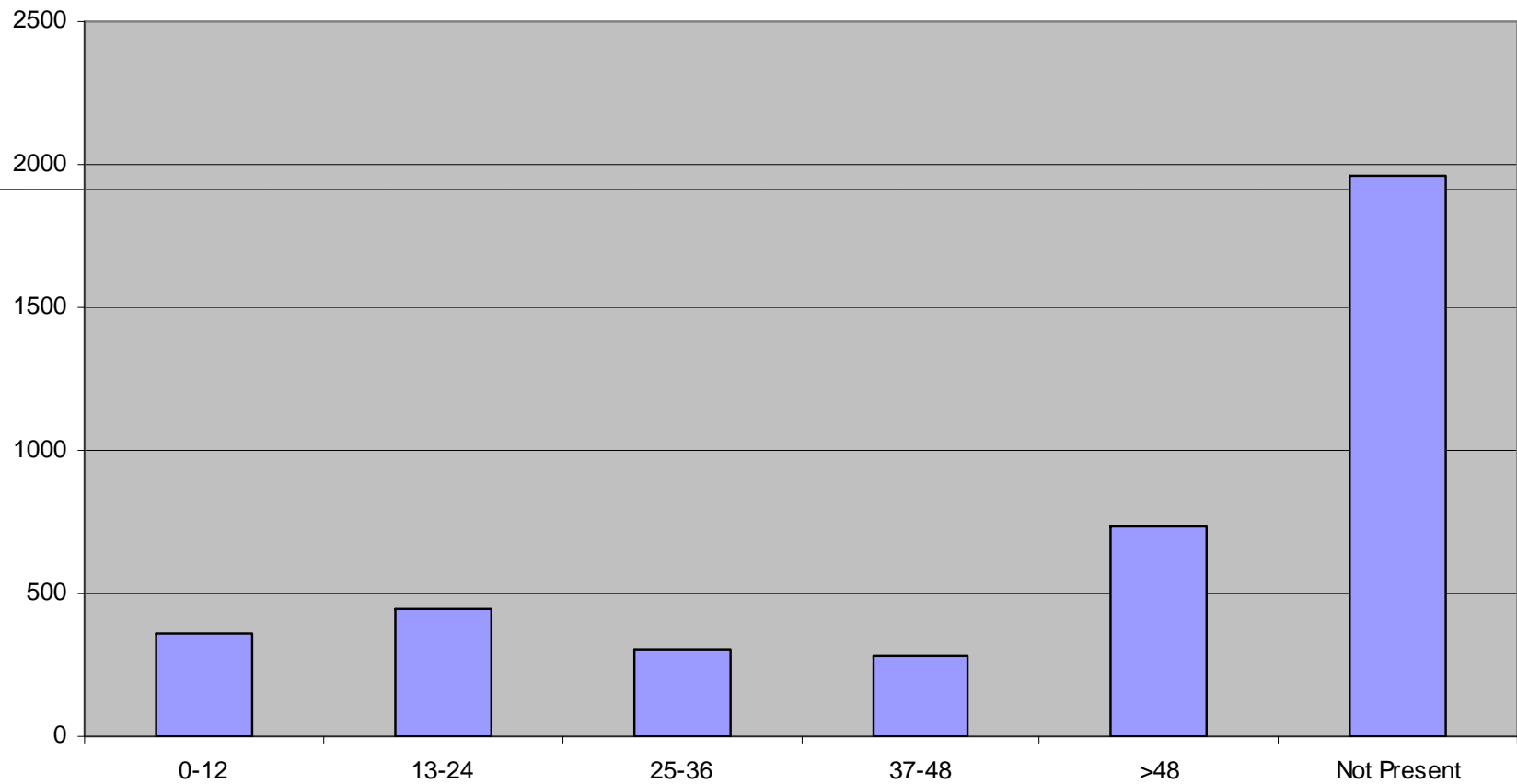
SYSTEM AGE



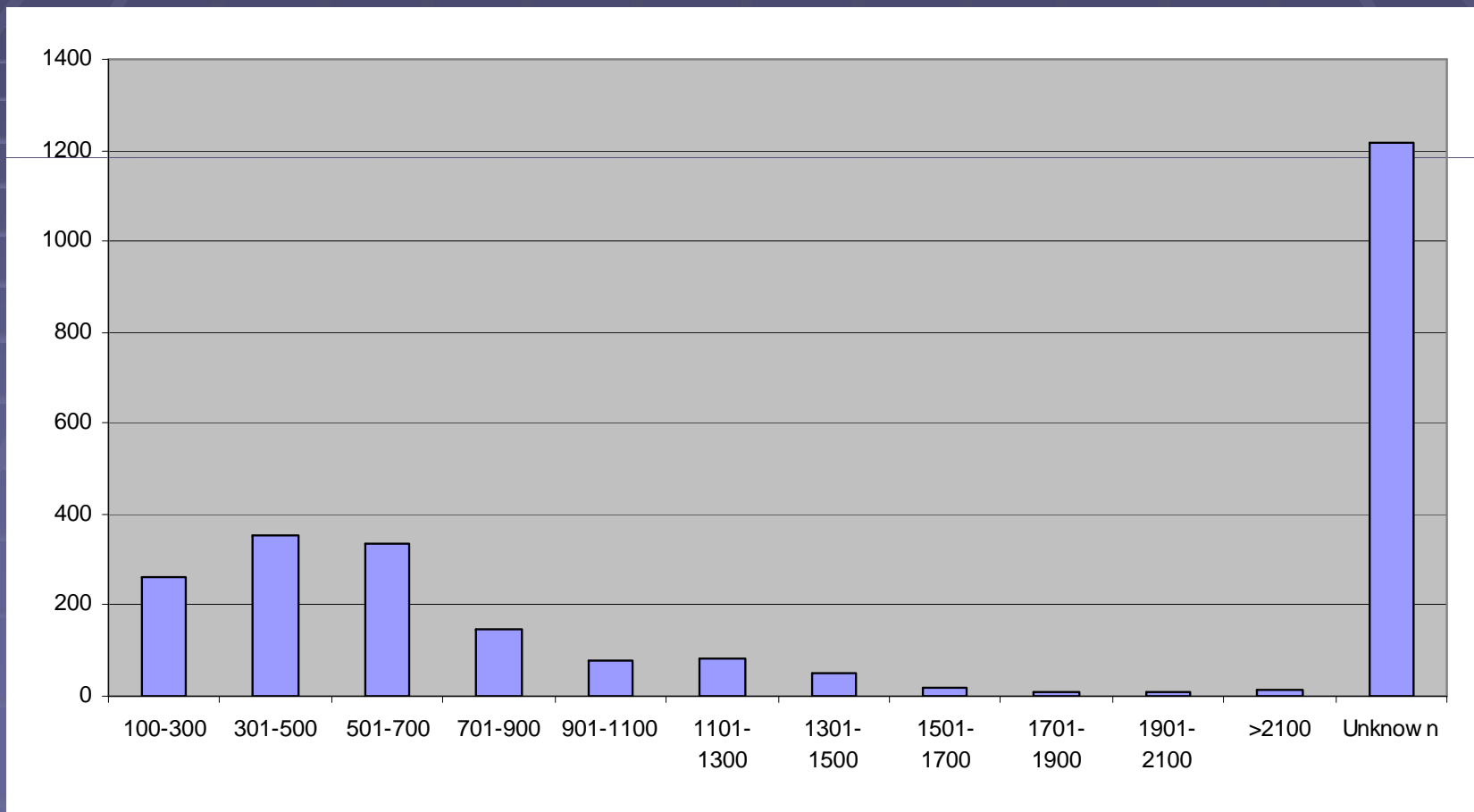
SOIL TEXTURES



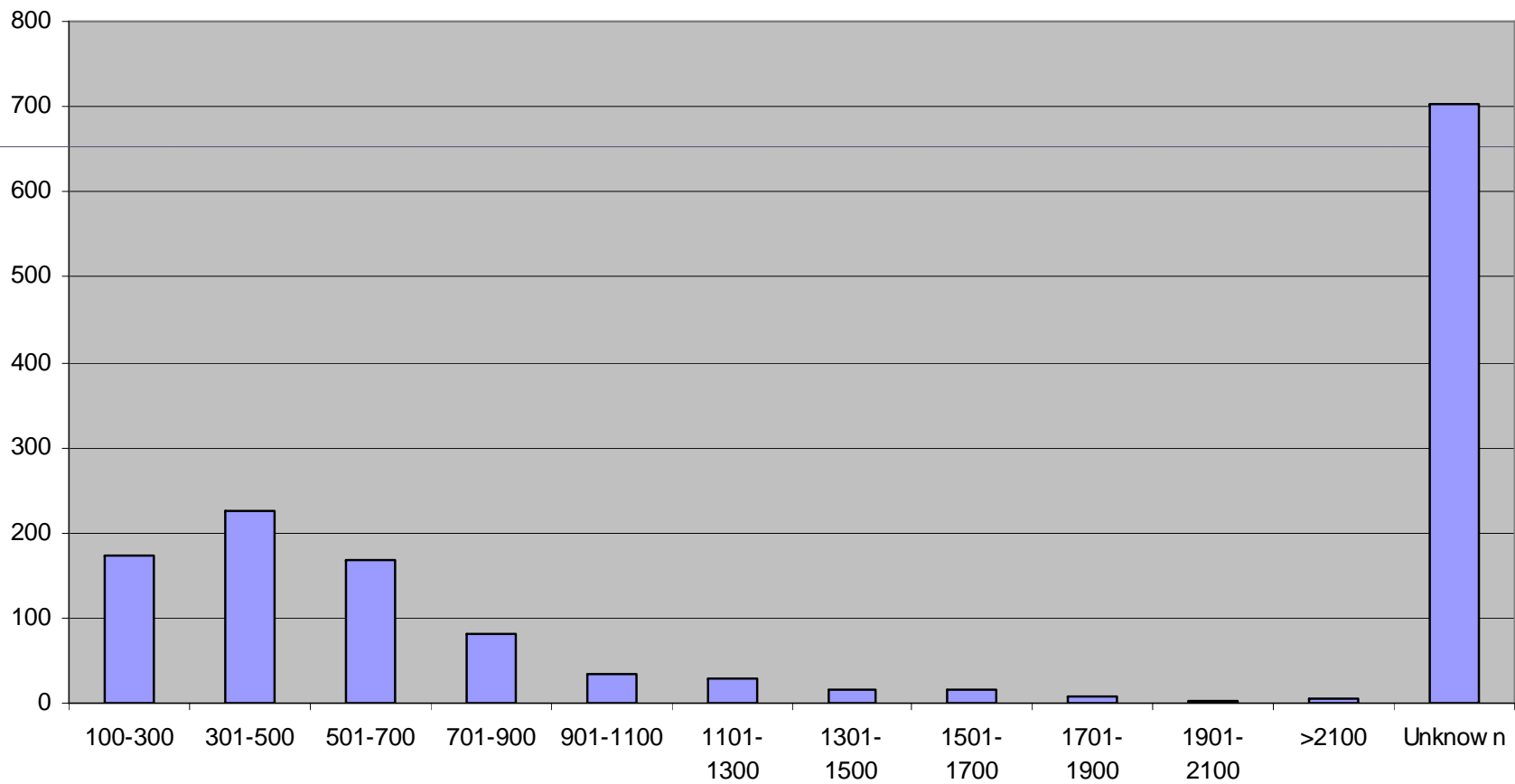
SEASONAL HIGH WATER TABLE



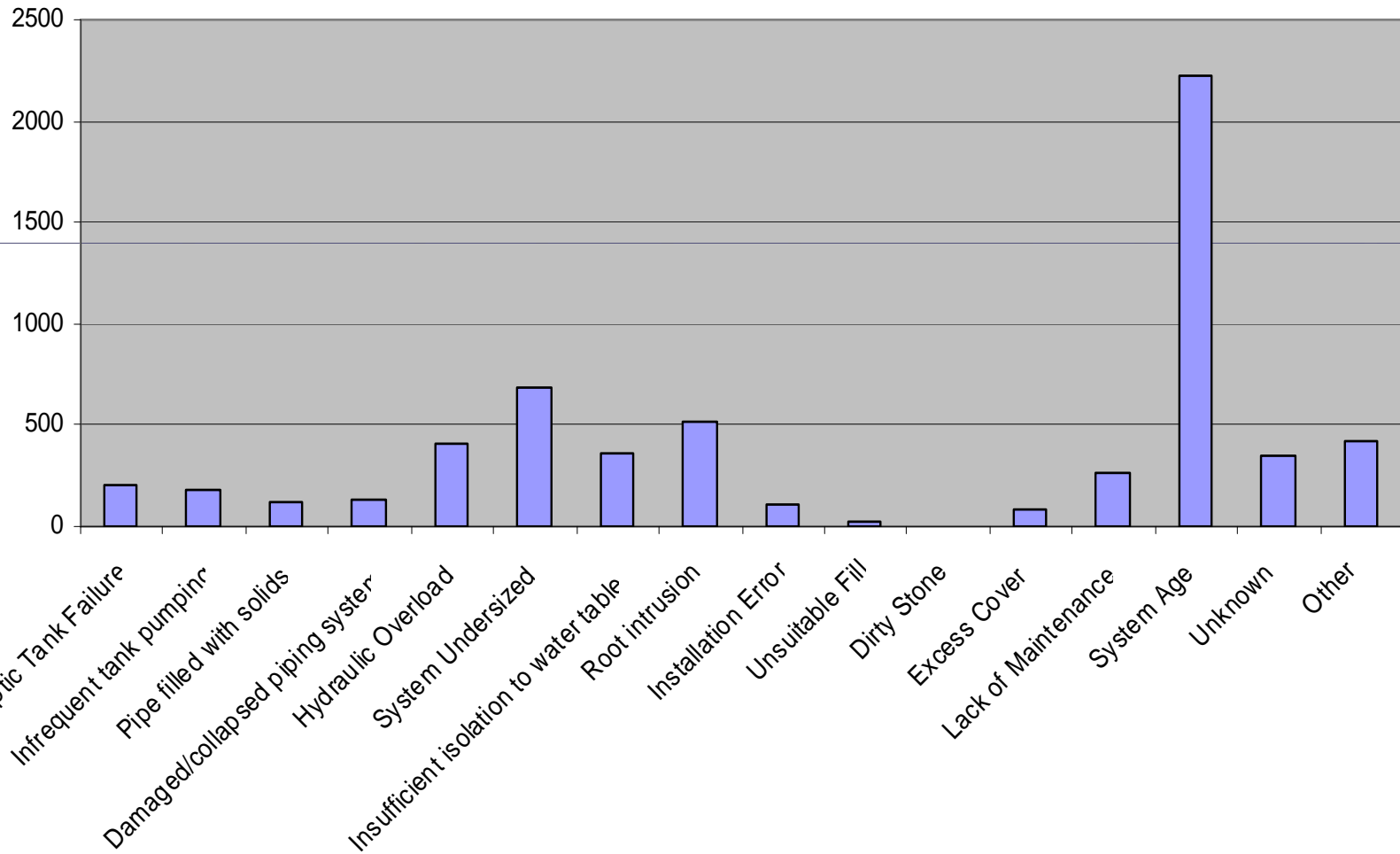
BED SIZE



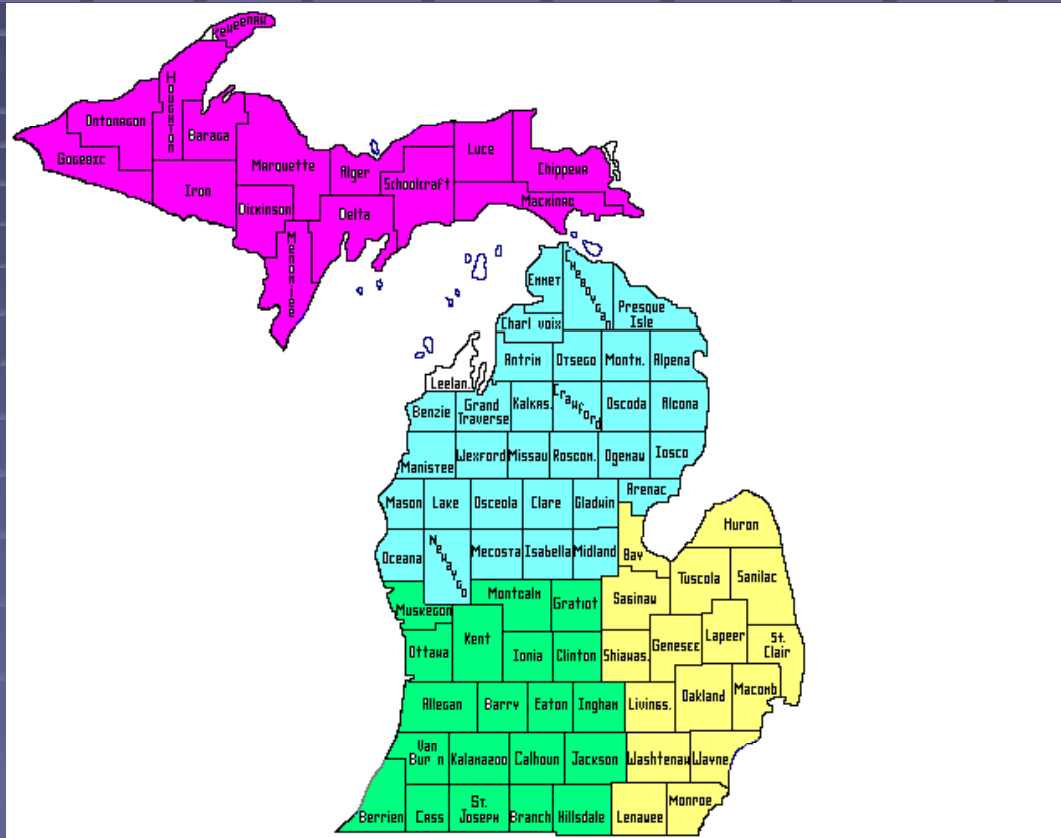
TRENCH SIZE



PROBABLE CAUSE OF FAILURE

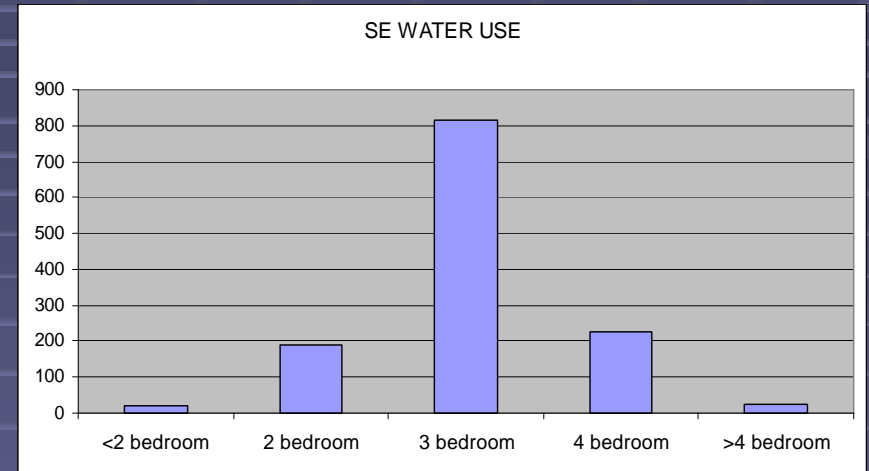
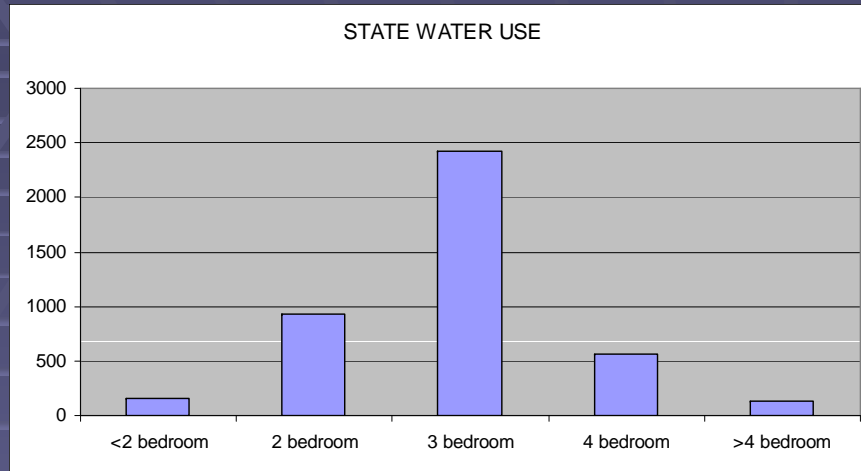


REGIONAL MAP



- No discernible major differences from statewide data

Example Comparison



- Estimated water use by number of bedrooms mirrors the overall statewide data

Comments

- Statewide summary is generic . No major conclusions as 2009 was the first year.
- Local site specific data may have greater value
- Commitment to review data with local health departments and modify as appropriate.

Recommendations for Change

- Develop a guidance document to improve consistency
- Separate residential from commercial
- Capture more specifics on septic tanks
- Add “none” as option for system design
- Eliminate “not present” for SHWT
- Eliminate “system age” as a most probable cause of failure

The future

- Recommendations have been implemented
- Modified data collection starting 1/1/2011
- Regional training for LHDs scheduled
- More to come

Michigan Department of Natural Resources and ENVIRONMENT

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Water

MICHIGAN'S WATER Our water quality programs protect our most precious resource!

Department of Environmental Quality Water Programs establish water quality standards, assess water quality, provide regulatory oversight for all public water supplies, issue permits to regulate the discharge of industrial and municipal wastewaters, monitor State Water resources for water quality, the quantity and quality of aquatic habitat, the health of aquatic communities, and compliance with state laws.

Announcements

- Proposal to Remove the Beach Closings Beneficial Use Impairment from the Kalamazoo River Area of Concern [PDF](#)
- Update on Selenium Projects at Empire and Tilden Mines [PDF](#)
- 2009 Selenium Monitoring Report [PDF](#)
- Marshall/Kalamazoo River Oil Spill Update - July 28, 2010 from the Department of Natural Resources and Environment
- Public Notice of Draft 2010 Integrated Report
- Water Quality Measures of Success [PDF](#)
- The Facts on August 2009 Fish Kill in Sanilac County's Black River [PDF](#)

DEQ Quick Links

- DNRE Calendar
- Military Salute
- Who Does What List [PDF](#)
- DEQ Publications
- DNRE Web Shortcuts [PDF](#)
- DNRE Acronyms [PDF](#)
- DEQ Laws and Rules
- DEQ Staff Spotlight
- Forms
- Training & Workshops

Quick Links

- Water Withdrawal Assessment Tool

http://www.michigan.gov/dnre
 or
 http://www.michigan.gov/deq

Department of Natural Resources and Environment

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On Site Wastewater

Administrative rules have been promulgated for on-site water supply and sewage disposal systems as they apply to the Land Division Act, 1967 PA 288, as amended.

Information

- U.S. Environmental Protection Agency
- Michigan Onsite Wastewater Recycling Association & Technical Advisory Council
- National Small Flows Clearinghouse
- MDEQ Sewage Program
- Whitepaper: Statewide Code for On-Site Wastewater Treatment [PDF](#)
- Technical Guide: Pressure Mound Systems [PDF](#)

Subdivisions and Condominiums

- Statewide Search for Subdivision Plats
- Subdivision and Condominium Site Report [PDF](#)

Local Health Department Information

- Michigan 2009 Statewide Failed Sewage System Evaluation Summary Report [PDF](#)
- LHD Community Wastewater