

National Stormwater Quality Database (NSQD) Version 4

Alex Maestre¹, Robert Pitt¹, Jane Clary²

Department of Civil, Construction, and Environmental Engineering¹
The University of Alabama - Tuscaloosa, AL

Wright Waters Engineers²
Denver, Colorado

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Introduction

- Reference for stormwater background concentrations throughout the United States
- The database is organized by State, EPA Geographical Region, and Land Use
- Started in 2001 compiling the results of Phase I NPDES Municipal Separate Sewer Storm Systems in collaboration of the Center of Watershed Protection
- Current version contains approximately the results of 10,000 storm sampling events

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Background

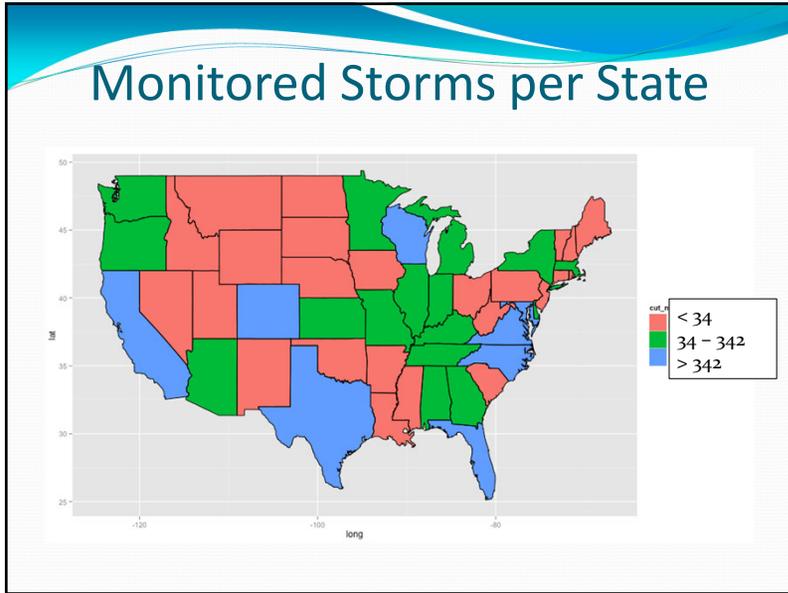
- The purpose of the database is to identify Event Mean Concentration (EMC) differences between different sampling methods, land use, geographical location
- It differentiates between concentrations during the first 30 minutes of the storm (First Flush) and the complete event
- Currently managed by the University of Alabama. The database is being transferred to the International Stormwater BMP Database

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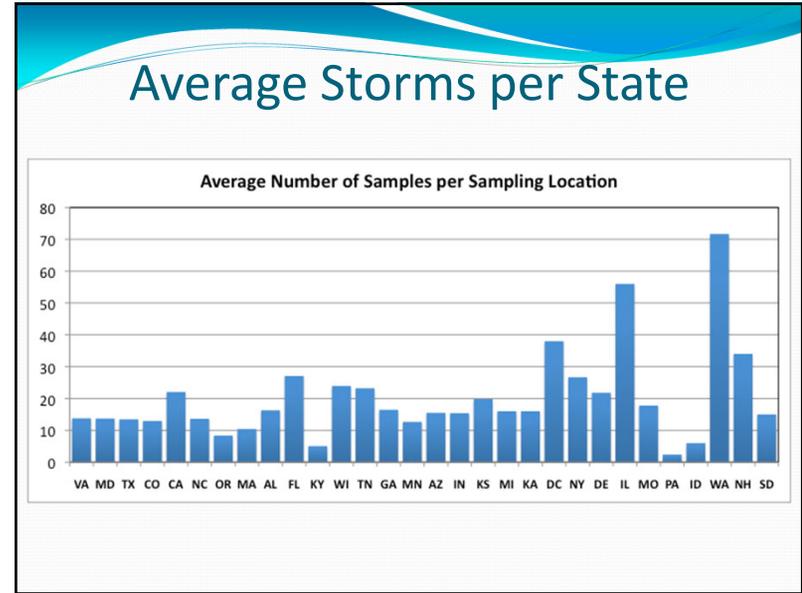
Sources of Information

- More than 100 NPDES Phase I Municipalities
- Reports from the National Urban Runoff Program
- USGS Urban Stormwater Database (Nancy Driver) and other USGS scientific reports
- Special projects that have calculated EMC

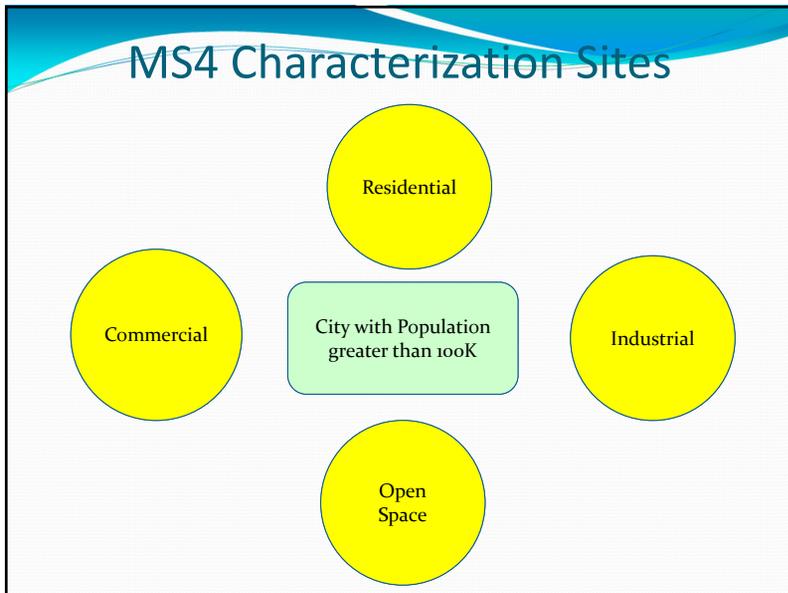
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Site Descriptions

California Department of Transportation

1.8 Introduction

The Caltrans NDES permit was adopted by the California State Water Resources Control Board on July 15, 1995. In California, EPA has delegated administration of the federal NDES program to the SWRCB and the state Regional Water Quality Control Boards. Prior to this date, Caltrans was under permit to all of the areas of California that had been determined to require an NDES permit with the exception of the Salinas area. These permits were issued individually by each Regional Water Quality Control Board over various time periods from 1990 to 1997. Caltrans requested that the SWRCB adopt a single NDES permit for storm water discharges from all Caltrans properties, facilities and activities. This permit was issued in 1999, and because the SWRCB had already issued permits to all areas requiring them, this permit was not considered a new storm water permit, and a Part I and Part II application were not required. Therefore, all of the data included in the Caltrans database was reviewed by the long-term monitoring data as approved in application monitoring data.

The long-term monitoring data sampling protocol described here is broken out into two sections: data collected prior to 2000, and data collected from 2000-2002. Long-term monitoring data collected from 2000-2002 was obtained under the single Caltrans permit and used a standardized sampling strategy for all sites. The data collected prior to 2000 was collected under different permits with more potential for variation in sampling strategy.

Because this is a statewide sampling program, a general description of the area is not available, as rainfall, climate and population vary widely across the state. Further information about individual sampling stations is provided below.

2.8 Sampling Station

Long-Term Monitoring

The Caltrans database contained storm water data for several hundred sampling sites. After eliminating data from inactive sampling stations, BMP sampling stations, dry weather samples, sediment samples, construction site samples, ground water samples, wet/dry and non-event samples, trucks and trailers and outfalls that drained mixed use, open space, agricultural or forested catchments, 11 sites remained. Table 1 presents the sites sampled prior to 2000 and Table 2 presents the sites sampled from 2000-2002.

Site ID	Site Name	Drainage Area (acres)	Landuse	%	Comments
CACTA005	7-01	0.99	Transportation	100	Located in Los Angeles County
CACTA006	7-127	0.99	Transportation	100	Located in Los Angeles County
CACTA007	7-128	0.99	Transportation	100	Located in Los Angeles County
CACTA008	7-201	3.16	Transportation	100	Located in Los Angeles County
CACTA009	7-202	4.18	Transportation	100	Located in Los Angeles County
CACTA010	7-203	0.96	Transportation	100	Located in Los Angeles County
CACTA011	8-01	0.4	Transportation	100	Located in Riverside



ECONOMIC 3/29/04

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Site Descriptions

- Narrative about the site
- Aerial photo
- Watershed delineation (if available)
- Parameters collected and period of collection
- Methods used during the water quality analysis



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Welcome to Robert Pitt's Webpage



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Theses and Dissertations

Current Research

- Stormwater Non-potable Beneficial Uses and Effects on Urban Infrastructure, Water Environment Research Foundation and US EPA, 2009 - 2012
- Field Monitoring of Up-Flo Filter - Bama Belle Site, HydroInternational, 2009 - 2013
- Stormwater Non-potable Beneficial Uses Identification and Treatment of Emerging Contaminants in Wet Weather Flows, US Environmental Protection Agency, 2007 - 2013
- Field Monitoring of Up-Flo Filter Environmental Contamination Sensor Development and Evaluations Associated with Natural Disasters, NSF and COSS UAB, 2008 - 2014
- Emerging Contaminants Biofiltration Media Evaluation: Geosyntec Consultants and Boeing Co., 2008 - 2012
- Development and Testing of Environmental Instrumentation NSF EPSCoR COSS Research National Demonstration of Advanced Drainage Concepts using Green Solutions for CSO Control: US EPA and Tetra Tech, 2008 - 2013
- Biofiltration Media Evaluation **National Stormwater Quality Database**
- Green Infrastructure and CSOs **National Stormwater Quality Database**
- National Stormwater Quality Database **Inappropriate Discharges**
- Relationships Between the Variability of Stormwater Characteristics and Development Characteristics

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Web Site

Recent Papers and Presentations of National Stormwater Quality Database

- ▣ Pitt, R., A. Maestre, and R. Morquecho. "Stormwater characteristics as contained in the nationwide MS4 stormwater phase 1 database." *Water World and Environmental Resources Conference 2004, Environmental and Water Resources Institute of the American Society of Civil Engineers, Salt Lake City, Utah, July 27 - August 1, 2004.* (conference CD-ROM) (1606 Kb)
- ▣ Maestre, A., Pitt, R. E., and R. Morquecho. "Nonparametric statistical tests comparing first flush with composite samples from the NPDES Phase 1 municipal stormwater monitoring data." Presented at the *Stormwater and Urban Water Systems Modeling Conference, Computational Hydraulics, Inc., Toronto, Canada, Feb 2003.* (1389 Kb)
- ▣ Maestre, A., R. Pitt, S.R. Durrans, and S. Chakraborti. "Stormwater quality descriptions using the three parameter lognormal distribution." Presented at the *Stormwater and Urban Water Systems Modeling Conference, Computational Hydraulics, Inc., Toronto, February 19 - 29, 2004.* (801Kb)
- ▣ Maestre, A. and R. Pitt. "Identification of significant factors affecting stormwater quality using the National Stormwater Quality Database." In: *Stormwater and Urban Water Systems Modeling, Monograph 14*, (edited by W. James, K.N. Irvine, E.A. McBean, and R.E. Pitt). CHI, Guelph, Ontario, pp. 287 - 326, 2006 (967Kb)

National Stormwater Quality Database (NSQD). Version 1.1 – Spreadsheets
NSQD Version 3 Spreadsheet [Excel File](#)

This most recent update on NSQD. It contains contains 8,602 rain events from 104 cities throughout the continental United States, and represents all 9 EPA Rain Zones and 12 land use categories.

Total size: 7.51 Mb, Updated: February 3, 2008, Version 3
NSQD Version 1.1 Spreadsheet [Excel File](#)

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International BMP Database Site

International Stormwater BMP Database

Home Get Data Submit Data Documents Guidance About

National Stormwater Quality Database

Overview

The National Stormwater Quality Database (NSQD) is an urban stormwater runoff characterization database developed under the direction of Dr. Robert Pitt, P.E., of the University of Alabama and the Center for Watershed Protection under support from the U.S. Environmental Protection Agency. Originally released in 2001, followed by several updates, it has recently moved to a new long-term home as a companion project to the International Stormwater BMP Database. The NSQD is being maintained as a separate stand-alone database, serving as an important resource for municipal stormwater managers and researchers who are seeking urban runoff characterization data. The NSQD can be searched for water quality data based on land use, state, and EPA Rain Zone, along with several other criteria. The NSQD can be downloaded from this website, and a new on-line user interface will be developed in the future.

Download the NSQD

The NSQD Version 3.1 (last updated March 2011) can be downloaded in two formats containing the same information:

1. NSQD Version 3.1 Excel Spreadsheet (original format) **Coming Soon**
2. NSQD Version 3.1 Access Database (new format) **Coming Soon**

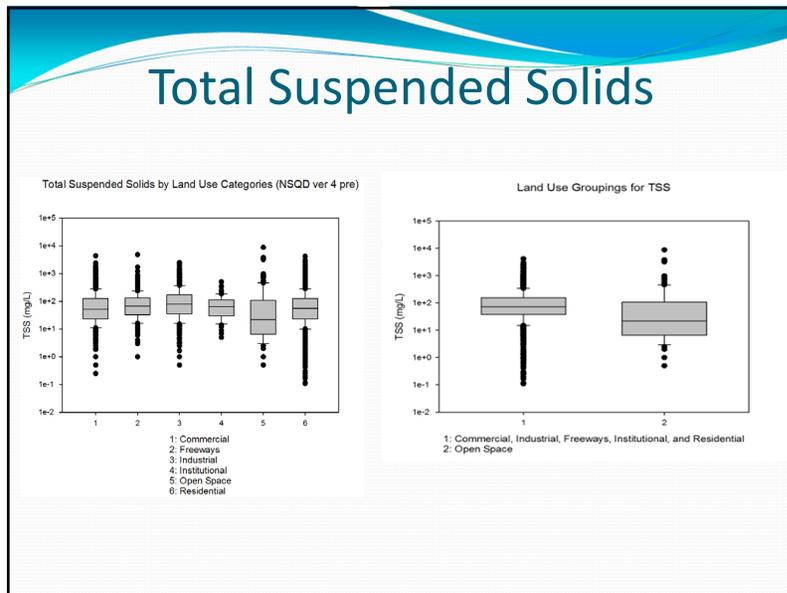
Papers and Previous NSQD Analyses

During the transition of the NSQD to its new home, additional explanatory information can be accessed [here](#).

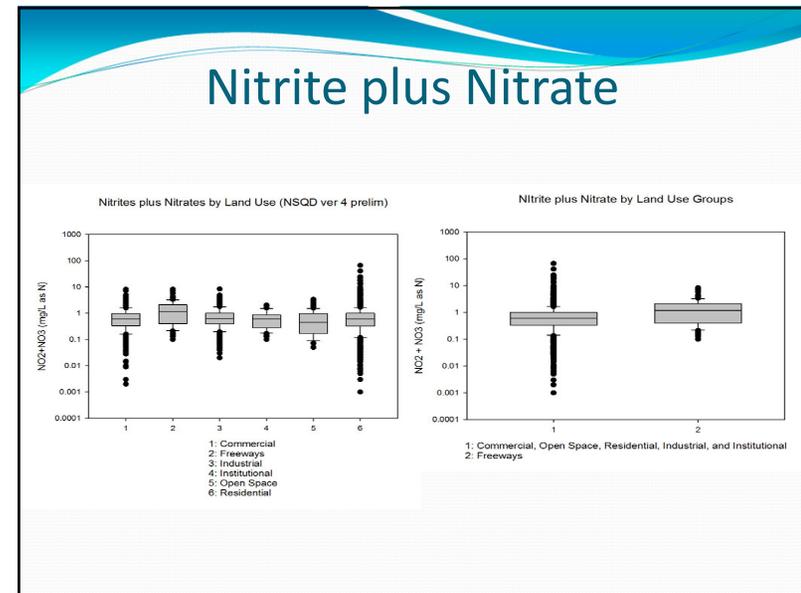
NSQD History

In 2001, the University of Alabama and the Center for Watershed Protection were awarded a U.S. Environmental Protection Agency, Office of Water 104(b)(3) grant to collect and evaluate stormwater data from a portion of the NPDES (National Pollutant Discharge Elimination System) MS4 (municipal separate storm sewer system) stormwater permit holders. In 2006, the NSQD was updated with additional data under continued 104(b)(3) support from the EPA. These stormwater quality data and site descriptions were collected and reviewed to describe the characteristics of national stormwater quality, to provide guidance for future sampling needs, and to enhance local stormwater management activities in areas having limited data. The monitoring data collected over nearly a ten-year period from more than 200

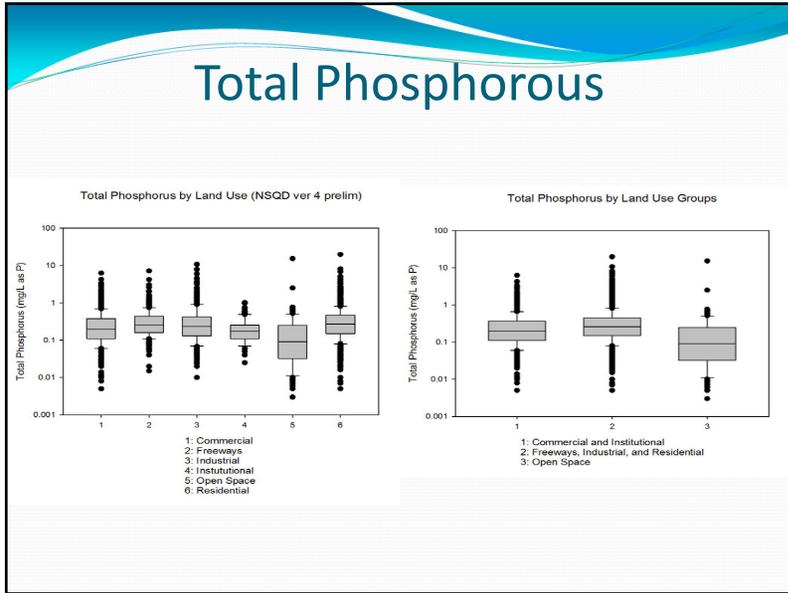
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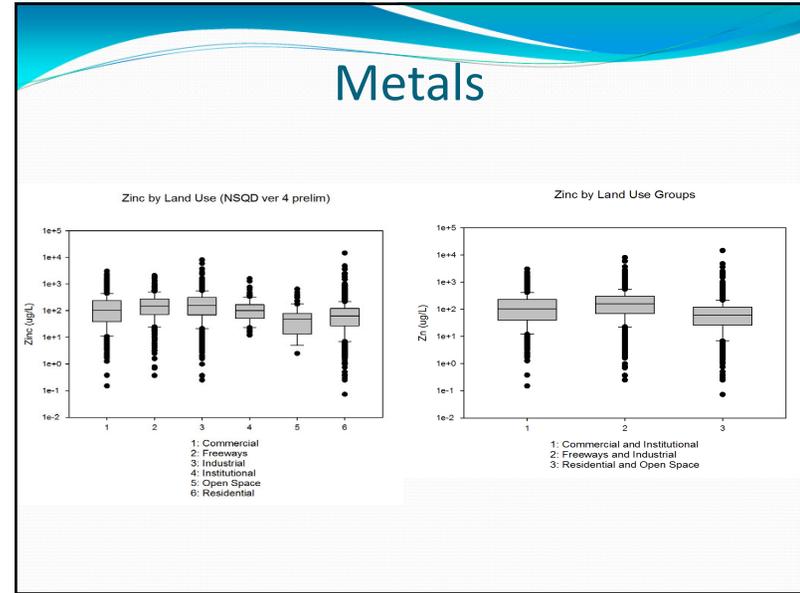
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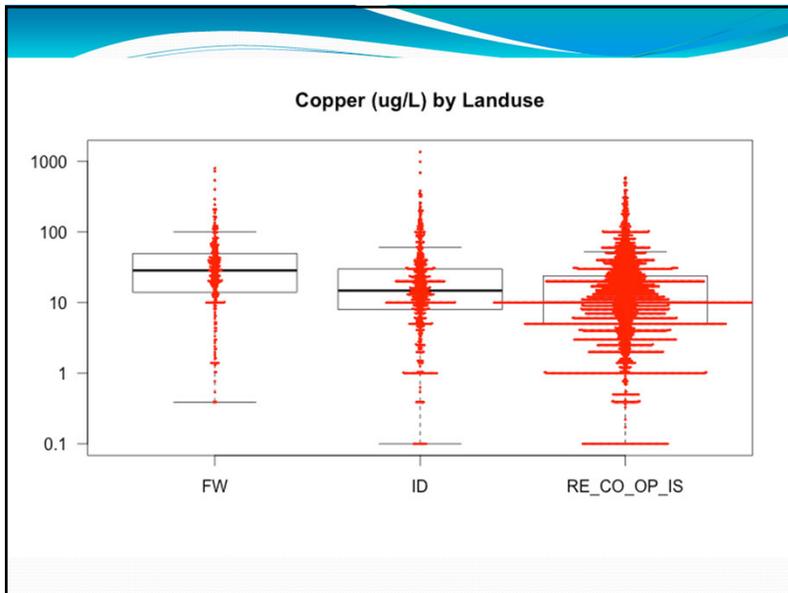
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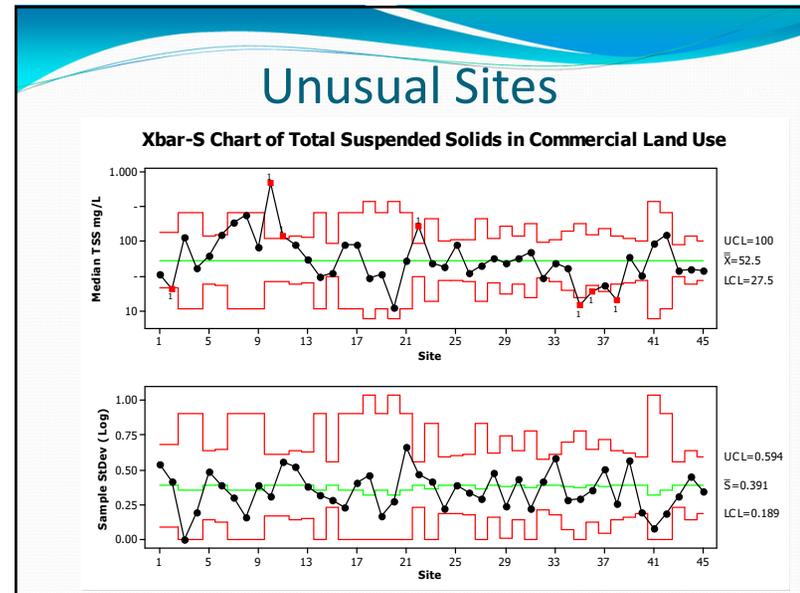
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The Hook

- NSQD version 4 is being currently completed. We expect to have the last version posted before the end of the year
- Two versions of the database (horizontal, vertical)
- Additional information including site descriptions
- Analysis of the database including non-detects

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Acknowledgements

- NPDES phase I communities
- Center of Watershed Protection
- Municipalities (Colorado, Kansas)
- Researchers (Special Projects)
- 104(b)3 EPA

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Contact

Alex Maestre

amaestre@eng.ua.edu

Robert Pitt

rpitt@eng.ua.edu

Jane Clary

clary@wrightwater.com

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