

JUL 08 2004

**PROJECT TITLE: Wastewater Phosphorus Control and Reduction Initiative****PROJECT MANAGER:** Marvin Hora**ORGANIZATION:** Minnesota Pollution Control Agency**MAILING ADDRESS:** 520 Lafayette Road  
St. Paul, Minnesota 55155**WEB SITE:** WWW.PCA.STATE.MN.US**FUND:****LEGAL CITATION:** MN Laws 2003, Chap. 128 Art. 1, Sec.166**FINAL REPORT****APPROPRIATION PCA AMOUNT: \$244,000**

7(c)

Overall Project Outcome and Results

The Minnesota Pollution Control Agency project had two efforts, 1) determination of the sources and relative contributions of non-ingested phosphorus which enters municipal wastewater treatment plants and 2) determination of the amount of all phosphorus contributed to waters of the state by point and nonpoint sources of pollution.

Phosphorous enters lakes and streams from both point sources (largely wastewater treatment facilities) and non-point sources (runoff from land areas). Statewide, under average flow conditions, point sources contribute about 31 percent of the total phosphorous load in Minnesota's surface waters. Sources are (from highest to lowest amounts):

- Commercial/industrial process water (12 percent)
- Human waste products (10.9 percent)
- Food wastes (from dishwashing and garbage disposal, 4.2 percent)
- Residential automatic dishwasher detergent (1.9 percent)
- Commercial automatic dishwasher detergent (0.9 percent)
- Raw/finished water supply (drinking-water additives, 0.8 percent)
- Dentifrices (toothpaste, oral products, 0.3 percent)
- Non-contact cooling water (which industrial sources discharge directly to surface waters, 0.2 percent)
- Groundwater inflow and infiltration to sewer systems, <0.1 percent).

Statewide, under average flow conditions, non-point sources contribute about 69 percent of the total phosphorous load to the state's surface waters. Sources include (from highest to lowest):

- Cropland and pasture runoff (26 percent)
- Atmospheric deposition (13 percent)
- Streambank erosion (11 percent)
- Lesser amounts from non-agriculture rural runoff, urban runoff, individual sewage treatment systems and unsewered communities, agricultural tile drainage, roadway and sidewalk deicing chemicals, and feedlots make up the rest of the contributions.

Phosphorous from non-ingested sources (those not passing through the human digestive tract) make up about 58 percent of the total amount of phosphorus entering municipal wastewater treatment systems each year. Making up this 58% are:

- commercial/industrial process water (27 percent)
- food wastes (16 percent)
- residential and commercial automatic dishwasher detergent (11 percent)

- the remaining sources, including dentifrices, non-contact cooling water, drinking-water treatment agents, and groundwater inflow/infiltration, make up approximately four percent.

#### Project Results Use and Dissemination

- The report is available on the Minnesota Pollution Control Agency Web Site.
- 25 Full copies of final report have been distributed
- 300 CD copies of the report have been distributed
- 350 copies of the Executive Summary have been distributed

The report will form the basic source for future Legislative Policy decisions regarding phosphorus control in Minnesota.

# FINAL REPORT

Susan Von Mosch

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**From:** Susan Von Mosch  
**Sent:** Wednesday, September 07, 2005 1:03 PM  
**To:** 'Steven W. Nyhus'  
**Cc:** KENNETH ROBINSON; John Velin; Gail Fox (E-mail); Sandy Smith  
**Subject:** RE: MESERB Wastewater Phosphorus Control and Reduction Initiative

2003  
7(c)

Steve and Ken,

Your amendment to adjust the final budget for your project is approved.

Your final report is also approved.

The abstract for your project, complete with the link to the MESERB web site, will be added to the LCMR project abstract web page.

Congratulations on a project well done. It's been a pleasure.

Susan Von Mosch

on behalf of LCMR staff

-----Original Message-----

**From:** Steven W. Nyhus [mailto:swnyhus@flaherty-hood.com]

**Sent:** Tuesday, September 06, 2005 3:45 PM

**To:** Susan Von Mosch

**Cc:** KENNETH ROBINSON; lcmr@commissions.leg.state.mn.us

**Subject:** MESERB Wastewater Phosphorus Control and Reduction Initiative

Good afternoon:

Per your e-mail of August 26, attached please find a cover letter from Mr. Robinson and a revised Work Program Budget Amendment Request and Attachment A, reflecting the additional clarifications you had requested. Thank you.

Steven W. Nyhus, Associate Attorney  
Flaherty & Hood, P.A.  
525 Park Street, Suite 470  
St. Paul, MN 55103  
Phone 651-225-8840  
Fax 651-225-9088  
[www.flaherty-hood.com](http://www.flaherty-hood.com)

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9/7/2005

**Sandy Smith**

**From:** Steven W. Nyhus [swnyhus@flaherty-hood.com]  
**Sent:** Tuesday, September 06, 2005 3:45 PM  
**To:** Susan Von Mosch  
**Cc:** KENNETH ROBINSON; lcmr@commissions.leg.state.mn.us  
**Subject:** MESERB Wastewater Phosphorus Control and Reduction Initiative

SEP 06 2005  
SAT  
SVM ☒  
YF  
SS

*looks good to me.*

Good afternoon:

Per your e-mail of August 26, attached please find a cover letter from Mr. Robinson and a revised Work Program Budget Amendment Request and Attachment A, reflecting the additional clarifications you had requested. Thank you.

Steven W. Nyhus, Associate Attorney  
Flaherty & Hood, P.A.  
525 Park Street, Suite 470  
St. Paul, MN 55103  
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9/6/2005



# MESERB

Minnesota Environmental Science  
and Economic Review Board

Using science and economics to improve environmental regulations

September 6, 2005

Susan Von Mosch, Manager of Research and Planning  
Legislative Commission on Minnesota Resources  
100 Rev. Dr. Martin Luther King Jr. Boulevard, Room 65  
St. Paul, MN 55155-1201

**BY E-MAIL ONLY**

**Re: MESERB Wastewater Phosphorus Control and Reduction Initiative  
2003 Work Program Final Report and Abstract**

Dear Ms. Von Mosch:

Per your e-mail request of August 26, 2005, enclosed please find the following regarding the above project:

1. MESERB's Work Program Final Report with mark-ups to reflect amendment request
2. Attachment A Budget Detail with mark-ups to reflect amendment request

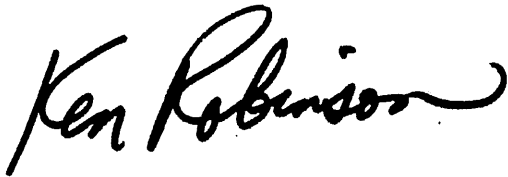
The Project Manager Qualifications, map, and Final Project Abstract were submitted to the LCMR on August 2, 2005 and so are not included here. The work program budget amendments requested in my letter to Ms. Thornton of August 2, 2005 are incorporated here by reference. To accommodate the clarifications requested in your e-mail, the following adjustments were made:

- Right before the Summary Budget Information for Result 2 (on page 13 of the final report), we added a bullet, "The \$3,118.46 from Result 2 was moved to Result 3."
- The budget for Result 2 was changed to \$62,367.54, and the balance is now \$0.76.
- On Attachment A, the Result 2 Total Labor Budget was revised to \$48,280.96 to offset the "negative" amount spent of \$5,308.96, so the balance is now \$ 0.00.
- Budgets for Advertising and Communications were revised so the remaining budget of \$3,118.46 could be moved to Result 3 budget, and the Result 2 balance is now \$0.76.
- We added \$3,118.46 to the Result 3 Budget (now \$24,928.46) by adding \$832.54 to Advertising (now \$1,832.54), and \$2,285.92 to the Travel Outside Minnesota budget (now total \$3,385.92) so that the budget agrees with the amount spent and the balance is \$0.00.

Susan Von Mosch, Manager of Research and Planning, LCMR  
September 6, 2005  
Page Two

Thank you for the LCMR's assistance. If you have questions or need additional information regarding this amendment request, please call me at 320-650-2812 or e-mail at [krobinso@ci.stcloud.mn.us](mailto:krobinso@ci.stcloud.mn.us).

Yours truly,

A handwritten signature in black ink that reads "Ken Robinson". The signature is written in a cursive, flowing style with a large, prominent "K" and a long, sweeping underline.

Ken Robinson, Public Utilities Director, City of St. Cloud  
MESERB Northern Representative and LCMR Project Manager

cc: Bruce A. Nelson, Alexandria Lake Area Sanitary District, MESERB President  
Keith Nelson, Winona, MESERB Secretary/Treasurer  
Marvin Hora, Environmental Outcomes Division, MPCA  
Christopher M. Hood, Flaherty & Hood, P.A.