

EXPERIENCE SUMMARY

Linda Severson is a water resources engineer with a diverse background in biological and physical sciences. For the past five years she has worked as both a consulting engineer and environmental scientist integrating her education, research, and work experience. Areas of specialized expertise include stormwater management, infiltration, limnology, and biology. In particular, Linda has research experience focused on modeling and designing infiltration practices.

EXPERTISE

Stormwater Management Analysis & Design
Floodplains
Erosion Control and Restoration
Recharge Analysis & Design
Shoreline Stabilization
Fisheries Management

EDUCATION

MS-Civil Engineering, 2005
University of Wisconsin-Madison
Madison, Wisconsin

BS-Fisheries & Limnology/ Biology, 2001
University of Wisconsin-Stevens Point
Stevens Point, Wisconsin

PROFESSIONAL HISTORY

Montgomery Associates: Resource Solutions,
LLC
Water Resources Engineer, 2005 – Present

Earth Tech
Environmental Scientist, 2002-2005

SELECTED PROJECT EXPERIENCE

Fireman's Park Shoreline Stabilization, Village of Marshall, WI (MARS Staff Engineer)

- Designed a block stone "step back" wall to stabilize the shoreline, maintain park functionality, and provide access to the Marshall Millpond
- Prepared permit applications and secured applicable permits for the project including Wisconsin Chapter 30 grading permit and the Village of Marshall Erosion Control Permit
- Prepared construction drawings and specifications for the 1,300 foot shoreline including a canoe launch.
- Provided bid support

Verona Urban Service Area Extension Impact Assessment, City of Verona, WI (MARS Staff Engineer)

- Analyzed existing fishery data
- Performed stream habitat assessment
- Performed watershed-wide analysis on existing and future runoff volumes
- Modeled development scenarios and the effects in groundwater recharge and surface runoff using current regulations
- Recommended future development requirements to minimize impacts on the Sugar River and Badger Mill Creek

San Diego Creek Channel Design, Irvine Company, Orange County, CA (MARS Staff Engineer)

- Provided technical support in determining articulated concrete block stability under varying flow conditions
- Developed a spreadsheet model to calculate the theoretical water surface profile for steep-sloped open channels under supercritical flow
- Used field generated data obtained from blocks installed in a test flume to determine best-fit Manning's roughness values for Armortec's concrete block revetment systems

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PUBLICATIONS & PRESENTATIONS

Severson, LM, 2007. *Modeling Bioretention Devices*. Presentation at WisLine Web Workshop: Post-Construction Stormwater Management.

Severson, LM, 2005-2007. *Designing Raingardens: Introduction / Demonstration of the RECARGA Model*. Presentation at UW-Madison, Engineering Professional Development: Designing Bio / Infiltration Practices for Stormwater Quality Improvement.

Severson, LM, D Atchison, K Potter, 2006. *Design Guidelines for Stormwater Bioretention Facilities*. University of Wisconsin Water Resources Institute Publication.

Severson, LM, 2006. *Designing Raingardens: Introduction / Demonstration of the RECARGA Model*. Presentation at Minnesota 4th Annual Stormwater Management and Erosion Control Conference.

Severson, LM, RJ Montgomery, NR Zolidis 2006. *Design of Infiltration Practices*. Presentation at NACECA-Wisconsin 3rd Annual Conference.

Severson, LM, 2005. *Design and Use of Small-Scale Infiltration Practices*. Presentation at American Water Resource Association-Wisconsin Section: 29th Annual Meeting.

TECHNICAL COMMITTEES

Dane County Infiltration Task Force, 2006

Abby Floodplain Study, Village of Fontana, WI (MARS Staff Engineer)

- Analyzed watershed land use for existing and future conditions
- Performed hydrologic and hydraulic modeling using XP-SWMM and HEC-RAS to determine the 100-year floodplain elevation
- Assembled the Wisconsin Department of Natural Resources and FEMA submittal package

Stormwater Management Plan (MS4 Phase II Permit), Rock County Towns Consortium, (Staff Engineer)

- Performed site inspections for the study area to detect Illicit Discharge at any outfalls
- Developed the approach and performed site-wide water quality analysis using Win SLAMM to determine current TSS reductions within the system

Sagamore Development Stormwater Management Plan, Porter County, Indiana, (MARS Staff Engineer)

- Prepared a Low- Impact stormwater management plan for a proposed residential subdivision
- Delineated watersheds and analyzed existing and future landuse
- Developed XP-SWMM model for existing and proposed conditions
- Designed stormwater features to maintain existing runoff volumes

Electrical Substation Stormwater Management and Erosion Control, Multiple Locations, WI (MARS Staff Engineer)

- Developed stormwater management and erosion control plans for various electric substation facilities
- Performed hydrologic, hydraulic, and water quality analysis of pre- and post- development conditions using XP-SWMM and P8
- Designed site stormwater layout and grading plans
- Performed construction time inspections

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Chapel Green Subdivision Floodplain Analysis, Village of Deforest, WI (MARS Staff Engineer)

- Developed a HEC-RAS hydraulic model for existing and proposed conditions
- Computed the 100-year floodplain elevations to determine if there would be impacts at the upstream property boundary due to the proposed grading plan and road crossing

Gollon Bait and Fish Farm Aquaculture Pond Design, Iowa County, WI (MARS Staff Engineer)

- Designed nine aquaculture ponds to support the chapter 30 permit application
- Developed a site grading plan, performed hydrologic and hydraulic analysis in XP-SWMM and HEC-RAS
- Prepared stormwater management and erosion control plans meeting state requirements

RECARGA Model Development, University of Wisconsin-Madison, (UW Graduate Student)

- Provided updates to the RECARGA infiltration model code
- Maintained an experimental raingarden
- Collected monitoring data including: rainfall, runoff, and infiltration at an experimental raingarden
- Compared monitoring data to RECARGA model runs
- Coauthored a paper on raingarden design which was published by UW extension

Stormwater Utility, Various Communities, WI, (Earth Tech Environmental Scientist)

- Evaluated financial needs for municipalities
- Performing impervious land use calculations in GIS and AutoCAD
- Determined utility rate fees for stormwater runoff
- Performing billing system integration in Microsoft Access
- Coordinated with clients.

Sea Lamprey Eradication Research, Michigan State University, MI (University Research Technician)

- Worked with Michigan State University as a fish research technician to install 15 stream structures for sea lamprey containment.
- Stocked differing sex ratios to estimate optimal levels of sterile male and female introduction by genetic analysis of offspring

Genetic Analysis of P450 Gene in Atlantic salmon, Michigan State University, MI (Research technician)

- Studied ways the P450 gene expressed itself at varying levels of toxicity in atlantic salmon
- Tended to a stock of yearling atlantic salmon
- Performed specimen injection of pollutants
- Sacrificed and dissected research specimens
- Performed RNA extractions from fish tissue samples

Cold-water Stream Priority Watershed Project, WI (DNR Field Technician)

- Performed fish habitat assessment using the methodology outlined in "Guidelines for Evaluating Fish Habitat in Wisconsin Streams" published by the USDA
- Performed stream shocking to sample fish
- Collected fish data including length, weight, and species identification
- Recorded data to be used to quantify the effects of dam removal on watersheds

Warm Water Small Stream Survey, WI (DNR Field Technician)

- Characterized fish communities and habitat in 100 degraded small warm water streams throughout Wisconsin
- Performed backpack shocking to sample fish
- Collected fish data including, length, weight, and species identification
- Performed habitat assessment
- Recorded data to be used in development of an effective index of biotic integrity

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Little Plover River Survey, Plover, WI
(American Fisheries Society)

- Led the annual stream survey
- Performed intensive electro-shocking in designated transects to estimate total brook trout population
- Collected data including fish length, weight, and scale samples
- Quantified fish condition and growth between consecutive years

Lake Neshonoc Survey/ Lake Mercer Survey, WI
(American Fisheries Society)

- Worked with the WDNR to perform annual lake surveys
- Performed boom-shocking and fyke netting to acquire fish
- Collected fish data including species, weight, length, and scale samples
- Calculated growth and condition parameters from species captured