



*Incorporating Nondegradation into
Planning and Management Activities*

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Outline

- *What are nondegradation assessments?*
- *Brief overview of general findings*
- *What do the results mean for cities and other entities?*
- *Incorporating nondegradation into routine planning and management*

Nondegradation Assessments

- *Part of NPDES Phase II stormwater discharge permit for 30 selected cities*
- *Must document haven't increased stormwater volume and pollutant loading to waters since 1988 or to 2020, or plan to prevent or mitigate any degradation to waters from those discharges*

Nondegradation Cities

- *Cities selected based on population and land use change since 1988*
- *The 30 cities and assessment due date*
- *Nondegradation assessments submitted to MPCA*
- *Awaiting review and final comments*

<i>September 1</i>	<i>October 1</i>	<i>November 1</i>	<i>December 1</i>	<i>January 1</i>	<i>February 1</i>
Rochester	Eagan	Brooklyn Park	Prior Lake	Savage	Chanhassen
Woodbury	Plymouth	Shakopee	Maplewood	Farmington	Chaska
Maple Grove	Blaine	Apple Valley	Coon Rapids	St. Louis Park	Inver Grove Heights
Lakeville	Bloomington	St. Cloud	Andover	Edina	Rosemount
Eden Prairie	Duluth	Burnsville	Elk River	Minnetonka	Cottage Grove

Process Steps/Requirements

Four key steps:

1. Assess **change in land use and imperviousness** from 1988 to present and out to 2020.
2. Estimate **net change** in total phosphorus (**TP**), total suspended solids (**TSS**), and **water volume**.
3. Identify **Best Management Practices (BMPs)** to return to 1988 conditions or better.
4. **SWPPP modifications**, if necessary based on findings.

Study Findings: TSS

- *Between 1988-2020:*
 - *Most cities will see a **DECREASE** from 1988 levels*
 - *Requirements on new development to provide runoff treatment*
 - *Other BMPs such as enhanced street sweeping, sump manholes*



Study Findings: TP

- *Between 1988-2020:*
 - *Most cities will see a **DECREASE** over 1988 levels or a very minor increase*
 - *Requirements on new development to provide runoff treatment*
 - *Ponds aren't as efficient at removing phosphorus as TSS*



Study Findings: Volume

- *Between 1988-2020:*
 - *Most cities will see a significant increase in annual runoff volume*
 - *Most attention to date focused on rate control*
 - *Volume management regulations new, focused on groundwater recharge*





Nondegradation Findings: Summary

- *Current development regulations and BMPs generally sufficient to prevent new **TSS, TP** loading over 1988 conditions*
- *Significant **new runoff volume** results from development and land use intensification*
- ***Few BMPs or regulations** are in place to reduce new runoff volume*

SWPPP Modifications

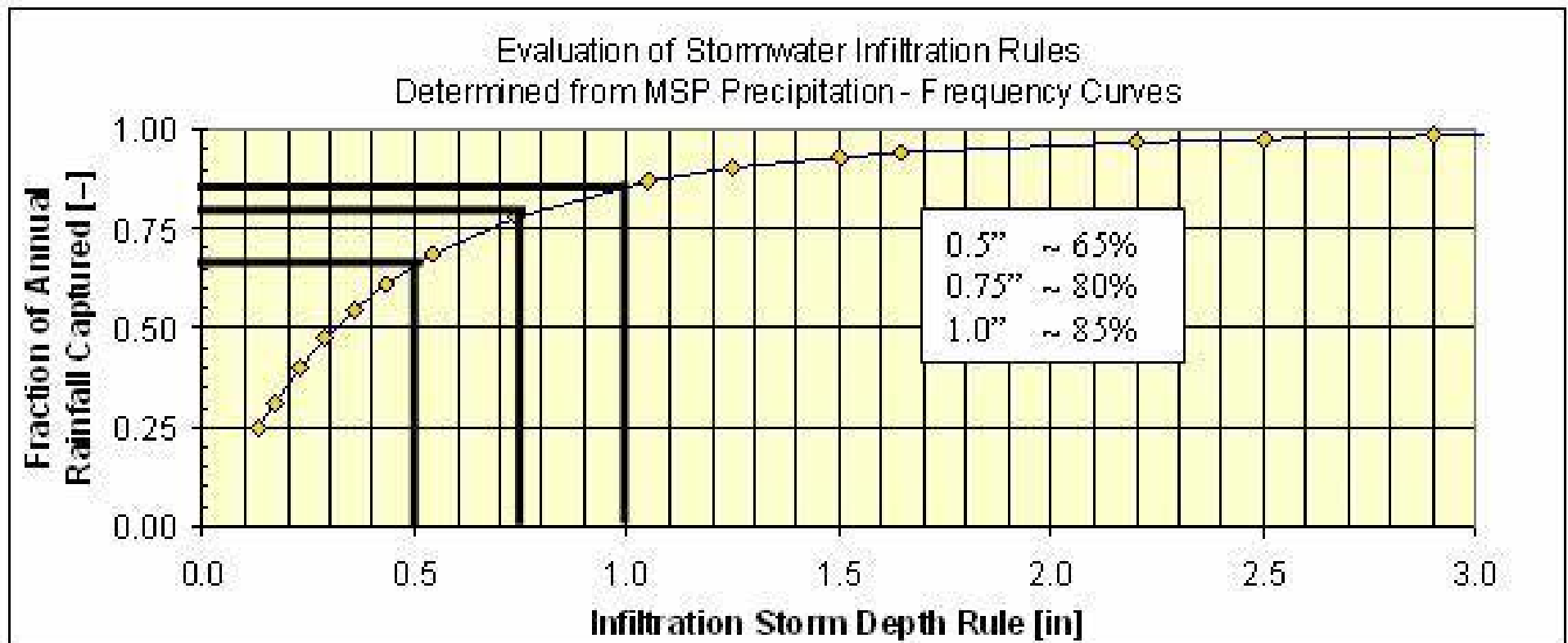
- *Continue current activities where effective*
- *Revise SWPPP to address nondegradation findings*
 - *Review ordinances and regulations to determine if modifications are necessary*
 - *Revise ordinances and regulations as necessary*
 - *Review practices, programs, and capital improvement program*
 - *Modify as necessary*

Modification of Local Controls

- *Development and redevelopment requirements*
 - *pollutant removal: NURP standards*
 - *rate control*
 - *erosion control*
 - *tree preservation and replacement ordinance*
 - *soil management requirements*
 - *abstraction/infiltration requirement for volume management*

Volume Management

- *Volume management regulation for new development: retain 1/2" – 1" runoff on site where possible*



Annual stormwater volume that could be captured through abstraction/infiltration.

(Worck Associates, Inc. derived from MPCA Minnesota Stormwater Manual Appendix B)

Volume Management

Reducing runoff volume also further reduces pollutant loading

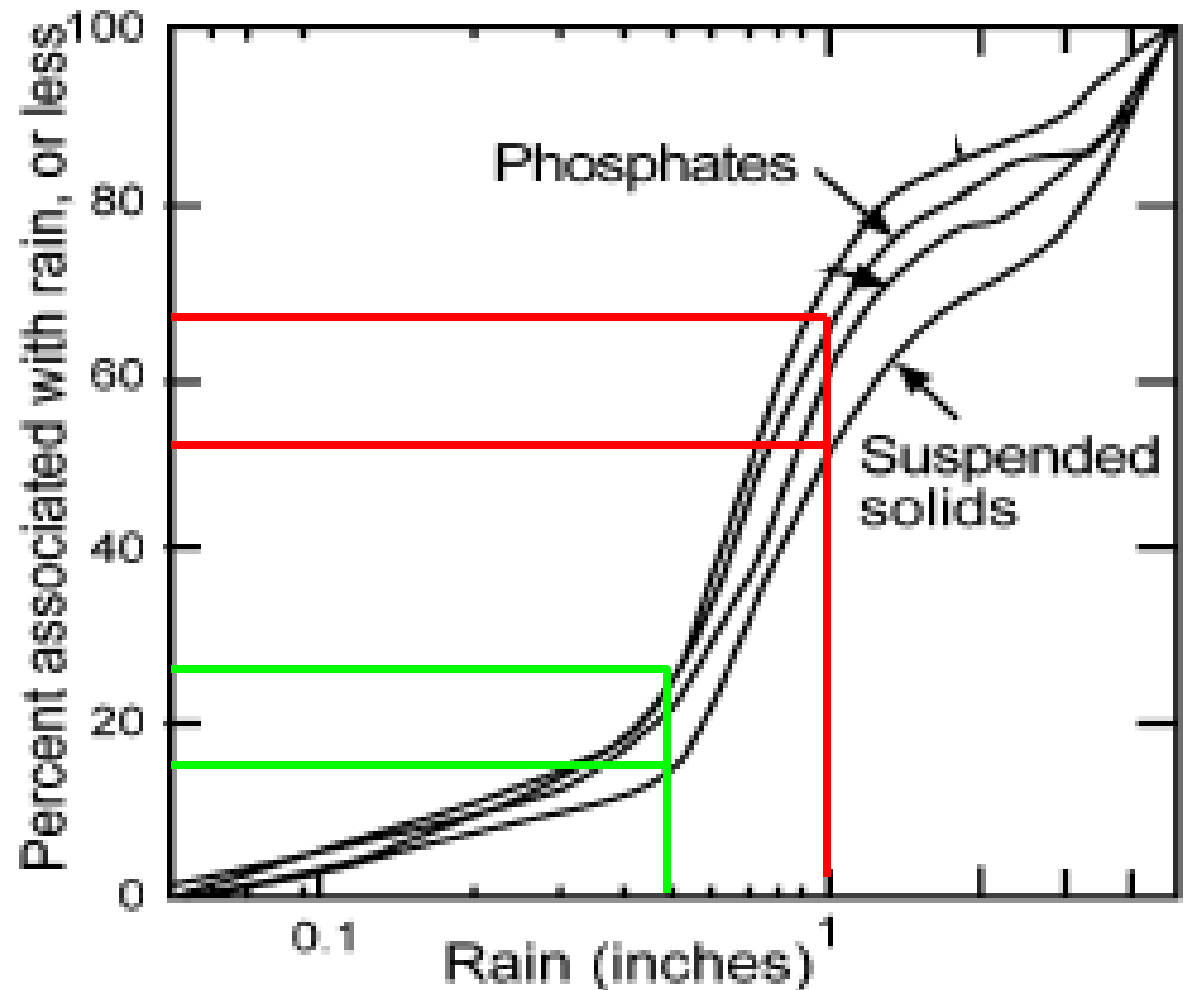


Figure 1.10-5 Milwaukee pollutant discharge distributions

Volume Management



Infiltration swale

Volume Management



Infiltration swale

Rain garden



Volume Management



Rain garden



Tree planting



Programs, Practices, and Projects

- **Educate** the public to promote rain gardens, native vegetation, tree planting
- **Educate** developers about Better Site Design and Low Impact Development
- Expand the use of nonstructural BMPs such as **tree planting**
- **Retrofit** structural BMPs where possible
- Periodically **inspect** channels, outfalls, and erosion-prone areas and stabilize where necessary

What Have We Learned

- *Larger and Metro cities are already implementing policies and practices that should be continued and expanded to other cities*
- *Consider volume management*
 - *Abstraction requirements*
 - *Emphasize Better Site Design*
 - *Promote BMPs such as bioinfiltration and tree planting on both public and private property*
- *Incorporate BMPs routinely or as opportunities arise*

What Have We Learned

- *Meeting nondegradation requirements as currently defined is not the same as meeting water quality standards*
- *TMDLs may require additional pollutant removal, volume and rate management*
- *Nondegradation analyses may assist TMDL implementation planning by IDing where change has or will occur*

Making Nondegradation Routine

- *Communicate: formal and informal*
 - *Inter- and intra-departmental: Engineering, Public Works, Planning, Forestry, Park Maintenance, Building Inspections*
- *Set a good example*
 - *Demonstration projects*
 - *Incorporate BMPs into City projects and routine activities*
- *Repeat your message*
 - *Repetition breeds familiarity*

Questions?

