Stormwater Reuse
Status of Work

• Draft Memorandum Developed
  – Select Literature Review
• 12/3/12 Meeting with Agency Staff
• Preliminary Reuse Modeling Complete
• 1/10/13 Meeting with Technical Team

Photo: Barr Engineering Company
Stormwater Reuse
Next Steps

• Late Jan./Early Feb. Meeting with Agency Staff & Technical Team
• Finalize Reuse Memorandum & Modeling
• Feb. 15 Meeting with MIDS Work Group
Stormwater Reuse Literature Review—Concerns

- Public health
  - Exposure to pathogenic bacteria
  - Cross-contamination of potable water
- Toxic spills within catchment area
- Operations and maintenance
- Chloride impacts on irrigated vegetation
Stormwater Reuse Literature Review—General Guidance Considerations:

- Guidance/standards originally developed for reclaimed water
- Treatment requirements often dependent on end use
  - Restricted or public access & potential for consumption
- Scale (residential vs. commercial)
- Cross-contamination potential
- Operation/maintenance/monitoring
- Residence time
Stormwater Reuse
Minnesota State Agency Jurisdictions

- MPCA: No official jurisdiction
- MDH: No official jurisdiction
- DLI: Regulation of conveyance to “point of disposal” (e.g., point where pipe discharges to stormwater pond)
Stormwater Reuse Preliminary Modeling

• Range for
  – volume reduction
  – pollutant removal

• Common scenarios
  – Reuse from a stormwater pond
  – Reuse from a cistern or tank

Source: Metropolitan Council Stormwater Reuse Guide
Stormwater Reuse
Preliminary Modeling:
General Methodology Framework

Estimated Reuse Volume

Variable: Reuse Volume

P8 Modeling – Watershed Runoff

Variables:
- Watershed Area
- Impervious %
- HSG Type

Daily Water Balance Model (spreadsheet)

Variables:
- Application Area
- Irrigation Rate
- Irrigation Period

Estimated Reuse Removal Efficiency

Variables:
- Reuse only
- Reuse from Pond
Stormwater Reuse
Future Work (beyond current MIDS workplan):

Jurisdiction:

- Group of agency staff to begin defining state agency roles/jurisdiction as it relates to stormwater reuse systems
Stormwater Reuse
Future Work (beyond current MIDS workplan):

Research:
- Investigation into water quality in stormwater ponds and comparison to reuse water quality standards/guidelines
- Health risk assessment of non-potable water (including stormwater) and investigation into cases of human illness related to stormwater reuse systems
Stormwater Reuse
Future Work (beyond current MIDS workplan):

Modeling:
- Development of full range of stormwater reuse curves to encompass variability in all reuse scenarios
  - Applications rates
  - Irrigation season
- Incorporation of stormwater into MIDS calculator