Watershed Based Stormwater Permit as a Model for Small Scale Transboundary Management in the Central Rio Grande Basin

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Presentation Outline

• MS4 (Stormwater) Permits
  – Individual Permits
  – Watershed Based Permit

• How is this relevant to Transboundary GW Mngmt?

• Albuquerque Watershed Based MS4 Permit
  – Benefits and Examples of Collaboration
What is an MS4?

**Municipal Separate Storm Sewer System**

- Stormwater conveyance or system of conveyances
  - roads with drainage systems,
  - municipal streets,
  - curbs and gutters,
  - ditches,
  - manmade channels, or
  - storm drains

- Owned by a state, city, town, special district, tribe, or other public entity that discharges to waters of the U.S. and is:
  - designed or used for collecting or conveying stormwater
  - not a combined sewer
  - not part of a Publicly Owned Treatment Works (POTW)
Stormwater Management

• National Academy of Sciences/National Research Council commissioned by US EPA in 2006

• *Urban Stormwater Management in the United States* issued in 2009; problems cited in the report:
  
  – Information on BMP longevity and performance
  – Varying requirements on monitoring
  – Lack of resources
  – Land use/water quality functions decoupled
  – Financial support
Watershed-based Permitting

• Solutions: Watershed-based permitting
  – More environmentally effective results
  – Reduced cost of improving the nation’s waters
  – More effective implementation of watershed-based plans and TMDLs
  – Greater opportunity for trading and market-based approaches
What is a Watershed?

An area of land where all water drains to a common outlet, such as a lake or river.
What is Watershed Based Permitting?

An approach to developing NPDES permits for multiple point sources located within a defined geographic area (i.e., watershed boundaries).
Possible Benefits

- Integration of other watershed protection programs under the Clean Water Act and the Safe Drinking Water Act
- Targeted and maximized use of resources to achieve environmental results
- Increased and coordinated public involvement in the permitting process
- Cooperation and collaboration among point source dischargers and other key stakeholders within the watershed
- Opportunities for water quality trading and other market-based strategies for meeting water quality standards

Watershed-Based Permitting

• In 2010, US EPA Headquarters designated:
  – Ramsey Washington Watershed District, Minnesota
    1 entity, established in 1975 under the Minnesota Watershed District Act
  – Milwaukee Metro Watershed, Wisconsin
    1 entity, created in 1982 by the Wisconsin legislature
  – Middle Rio Grande, New Mexico
    18 entities, no oversight governmental body
NEW MEXICO WATERSHED BASED PERMITS
Major NM Watersheds and Basins
MRG is just part of the Rio Grande Basin
NM Watershed Based MS4 Permits

- Middle Rio Grande = Albuquerque
- Small MS4 = Farmington, Santa Fe, Los Lunas, Las Cruces, El Paso area, Albuquerque suburbs
- MRG MS4 pilot program
  - combined Phase 1 and Phase 2 into one permit
  - Statewide draft permit modeled on MRG permit
Large & Small Urbanized Areas

- **MRG (Albuquerque Area)**
- **sMS4s**
Middle Rio Grande Watershed-Based Permit

- Overlapping jurisdictions
- Differing levels of technical expertise and sophistication
Middle Rio Grande MS4s

- City of Albuquerque
- AMAFCA
- UNM
- NMDOT (District 3)
- ESCAFCA
- Sandia Labs (DOE)
- Pueblo of Sandia
- Pueblo of Isleta
- Pueblo of Santa Ana
- Bernalillo County
- Sandoval County
- Village of Corrales
- City of Rio Rancho
- Los Ranchos de Albuquerque
- KAFB
- Town of Bernalillo
- EXPO (State Fairgrounds/ Expo NM)
- SSCAFCA
MRG Watershed-based MS4 Permit
Middle Rio Grande Watershed-Based Permit

- Natural collaborations
  - Same geographic area
  - Pre-existing collaborative efforts from previous permits
- Existing barriers
  - Us vs. them mentality
  - County line between Bernalillo and Sandoval Counties
- How do we break down those barriers and try to act like a watershed?
Middle Rio Grande Watershed-Based Permit

• Technical Advisory Group
  – Fourteen signatories to the TAG
  – All levels of government represented (except Tribal)
  – TAG started meeting in early 2014
  – Excellent exchange of information and ideas
  – Peer reviews of NOIs took place and general assistance on language for NOIs when requested.
  – Sharing documents (SWMPs, Ordinances, etc.) via Dropbox
  – Attitude shift among MS4s: Let’s act like a watershed
Middle Rio Grande Watershed-Based Permit

- Also, build on previous success
  - Prior to the Watershed Based (WSB) Permit, several of the MS4s had a highly effective collaboration for outreach and education, Stormwater Quality Team (SWQT)
  - The SWQT continued to operate and opened up its membership to other MS4s covered in the WSB Permit
  - Requires financial contribution for each member
  - Provides education and outreach on permit required topics
  - Currently, there are 9 members of the SWQT, and membership is still open
Middle Rio Grande Watershed-Based Permit

• Reaching outside of the MRG
  – On April 27, 2016, a statewide summit of MS4s was convened in Albuquerque
  – The Summit provided networking opportunities for MS4s, information on MRG processes and access to documents generated “here” for usage “there”
Large System MS4 Permit

- Issued in December 2015
- The purpose is to regulate storm water discharges from large municipal separate storm sewer systems (MS4s) located in the State of New Mexico (Albuquerque area)
Small System MS4 Permit

• The draft New Mexico general watershed-based permit for small MS4s (NMR04000) was issued in June 2015

• The purpose is to regulate storm water discharges from small municipal separate storm sewer systems (MS4s) located in the State of New Mexico
Benefits of Collaboration

• Better results!
• Increased time to comply with permit requirements
• Reduced cost through cost sharing: water quality monitoring, preparation of documents, studies, reports
• Communication/collaboration/common goals
Cooperation in the MRG

• Watershed-based permit encourages cooperative compliance
• Great opportunity for cost savings: water quality monitoring
• Public education/participation is a big area
• Cooperation is encouraged, but not required
Shared Documents

• Stormwater Management Plan
• Sediment Study
• Monitoring Plan
• Quality Assurance Project Plan
• Etc....
Shared Knowledge

• Notice of Intent
• Annual Reporting
• Stormwater Quality Controls
• Public Involvement
Collaborative Group

- Compliance Monitoring Cooperative, 2016
- SSCAFCA is the fiscal agent
- Focus is on the water quality monitoring requirements
MRG Cooperative Efforts

- Technical Advisory Group (TAG)
  - Signed agreement
  - No financial obligation

- Stormwater Quality Team (SWQT)
  - Public Education
  - Public Involvement

- Compliance Monitoring Cooperative, 2016
  - SSCAFCA is the fiscal agent
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Public Education and Outreach

**Disgusting ... Destructive ... Very Costly!**
**Don’t Pour Fats, Oils & Grease Down the Drain!**
896-8715

**Cool It! Can It! Chuck It!**
Remember: Grease Belongs in the Trash, Not the Sink

City of Rio Rancho Environmental Programs

Water Utility Authority
Public Involvement and Participation

• Collaborative presentations by State and local government representatives
• Workshops for construction community
• Presentations at professional conferences
• Presentation with EPA staff
80th/90th Percentile Storm Volume

- MRG Permit includes requirements to retain on-site the entire volume of the 80th/90th percentile rainfall
  - New Construction: 90th percentile
  - Redevelopment: 80th percentile
- Addresses first flush runoff
- On-site infiltration or evapotranspiration
Stormwater Retention

- MRG Group developing regional approach to retention
- Will be presented to EPA
- Instead of individual property owners retaining 80th/90th percentile storm, regional ponds
- Funding strategy to be developed
Water Quality Monitoring

• The TAG formed a working group to develop a monitoring plan
  – Twelve MS4s cooperate on wet weather monitoring
  – Worked with NMED and EPA on how (and the why behind the how) it would work
  – LOTS of reviews/revisions to the legal agreement between MS4s
Water Quality Sampling

• 7 events during the permit period:
  – 3 during wet season (July to October)
  – 2 during dry season (November to June)

• 4 grab samples, 15 minutes apart

• Rainfall > .25 inches
Middle Rio Grande Watershed-Based Permit

Wet weather monitoring

• Significant permit incentive for MS4s to cooperate on monitoring
Water Quality Sampling
Wet Weather Monitoring
CWA 303(d) Monitoring Needs

- DO
- Gross alpha
- PCBs
- Temperature

TMDL - E. coli

- Canine 21.9%
- Bovine 7.2%
- Horse 4.3%
- Rodent 10.8%
- Feline 2.2%
- Porcine 1.4%
- Sheep 0.5%
- Coyote 0.5%
- Deer, 0.6%
- Raccoon 0.5%
- Human/Sewage 15.9%
- Avian 33.5%
Cooperation in the MRG

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