

Watershed Based MS4 Permitting Pilot in the Middle Rio Grande

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Let us introduce ourselves...

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Outline

- Background (TMDL & NPDES)
- Introduction to Watershed Based Permits
- Mechanics of the permit
- Discussion



Framework for Restoring Polluted Waters

Develop Water Quality Standards

Monitor and Assess Waterbodies

List Impaired Waters (303d list)

Develop TMDL

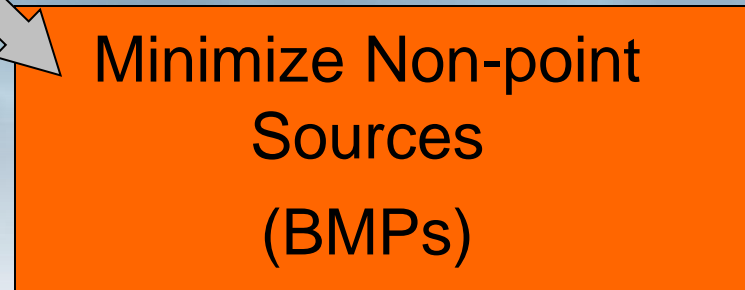
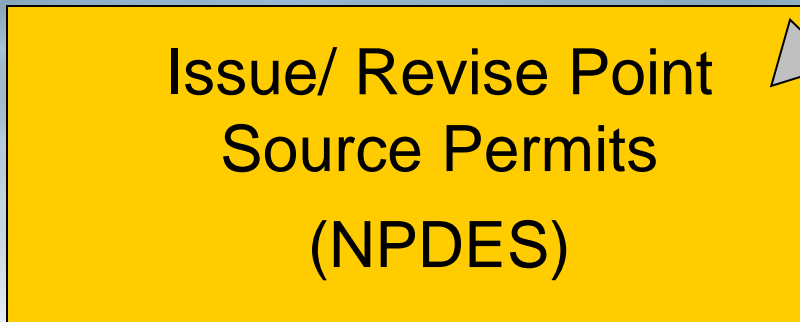
Issue/ Revise Point
Source Permits
(NPDES)

Minimize Non-point
Sources
(BMPs)

Problem
Identification



Problem
Solving



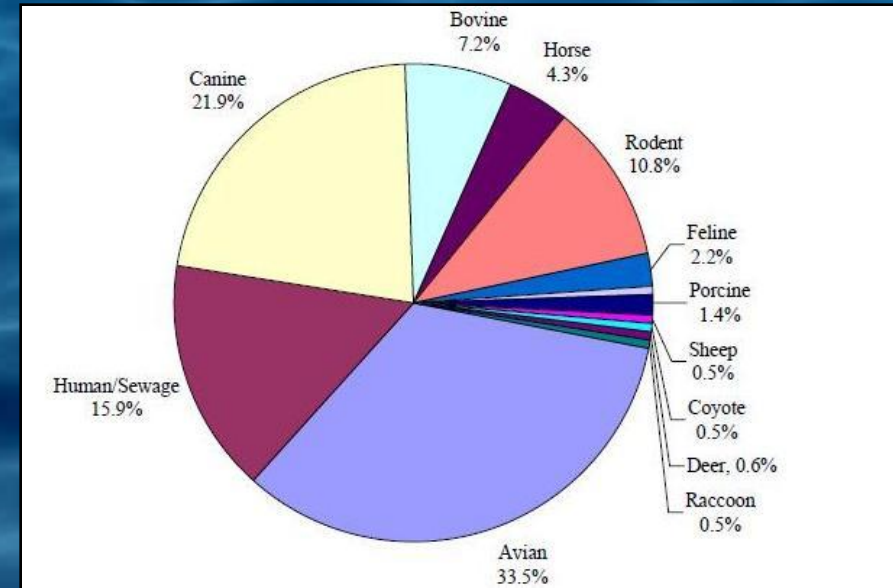
TMDL Intro

- The Federal CWA requires States to develop TMDLs for impaired waterbodies.
- TMDL = The maximum amount of a pollutant that can enter a stream without causing an impairment.
- $TMDL = WQS \times Critical\ Flow \times CF$
- $TMDL = \sum LA + \sum WLA + MOS$



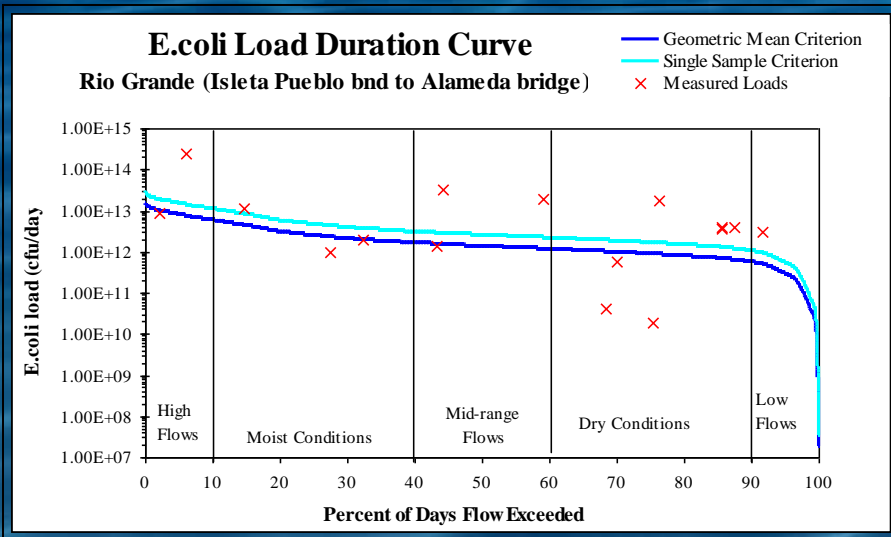
MRG TMDL Review

- MRG fecal coliform TMDL (2002)
- MRG Microbial Source Tracking Study (2005)
- MRG *E.coli* TMDL (2010)
 - Two assessment units in Abq-area
 - Flow duration curves used to assign TMDLs during 5 flow regimes.
 - Jurisdictional area approach used to assign WLA to MRG MS4 permittees.
- Abq-area MRG also impaired for temperature, PCBs in fish tissue, and dissolved oxygen.

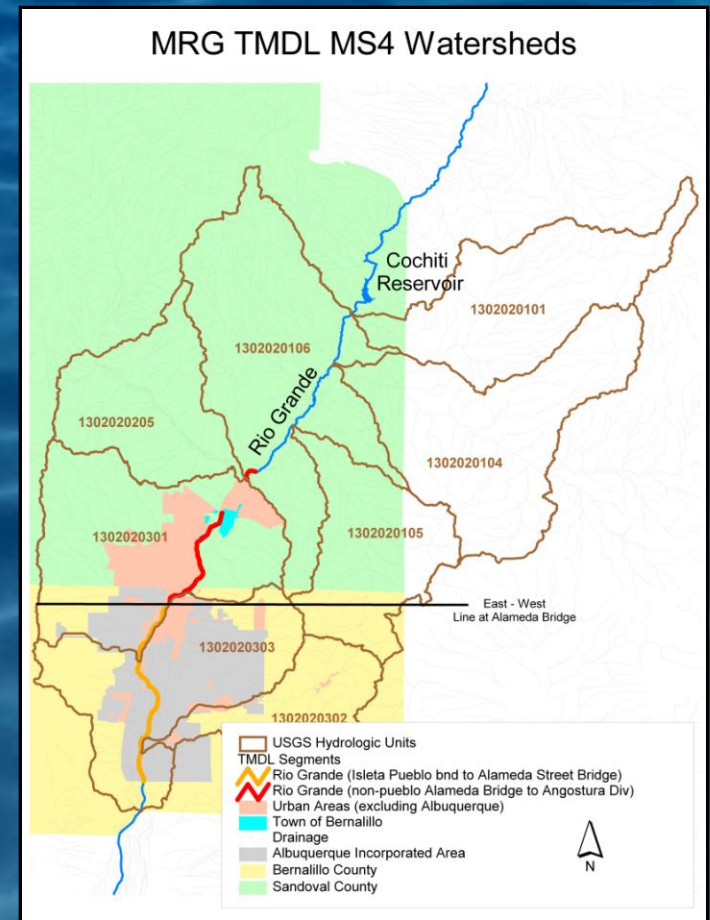


Source: MRG MST Assessment Report, Parsons (2005)





- LDC- describes the characteristics of the water quality impairment. Indicators of NPS versus PS sources.
- JA- loading capacity is allocated to permitted stormwater sources on the basis of the portion of the drainage area included within their physical boundary.



Basic NPDES Info

- EPA/State Roles
- Permitting process
- Permit terms (5 years)
- Types of permit coverage
- NPDES Regulations - 40 CFR 122.26 (storm water discharges)



NPDES MS4 Requirements

- MS4:
 - Conveyance or system of conveyances that is:
 - Owned by a state, city, town, village or other public entity that discharges to waters of the U.S.
 - Designed or used to collect or convey stormwater
 - Not a combined sewer
 - Not part of a POTW
- Phase 1: 1990
 - MS4s of Population $\geq 100,000$; Usually dealt with in individual permit
 - 6 Minimum Measures
 - Monitoring
- Phase 2: 1999
 - MS4s in all UAs or as designated by EPA; Usually dealt with in a general permit
 - 6 Minimum Measures



ABQ Area MS4 History

- Phase 1 Permit issued in 2003
 - Audit findings 2009
- Phase 2 permits started process in 2007
 - Currently 1 permit (in Abq area) has been issued (under sMS4 general permit)
 - Kirtland AFB
 - 9 entities are required to have coverage
 - Town of Bernalillo, Sandoval County, City of Rio Rancho, Los Ranchos, Kirtland AFB, NMDOT, Corrales, SSCAFCA, Bernalillo County



NRC Report

- National Academy of Sciences/National Research Council commissioned by EPA
- 529 page report in 2009
- Findings:



- **“EPA’s current approach to regulating stormwater is unlikely to produce an accurate or complete picture of the extent of the problem, nor is it likely to adequately control stormwater’s contribution to waterbody impairment. The lack of rigorous end-of pipe monitoring, coupled with EPA’s failure to use flow or alternative measures for regulating stormwater, make it difficult for EPA to develop enforceable requirements for stormwater dischargers. Instead, the stormwater permits leave a great deal of discretion to the regulated community to set their own standards and to self-monitor. Current statistics on the states’ implementation of the stormwater program, discharger compliance with stormwater requirements, and the ability of states and EPA to incorporate stormwater permits with Total Maximum Daily Loads are uniformly discouraging. Radical changes to the current regulatory program appear necessary to provide meaningful regulation of stormwater dischargers in the future.”**



If this was a letter grade...



Problems with current stormwater implementation

- Limited information available on effectiveness of BMPs
- Requirements for monitoring depend on regulated entity and type of activity
- Lack of resources/staff to review stormwater management plans and conduct inspections at the regulatory level.



NRC Urges Moving Toward...



- Regulations implemented at the land-use development stage
- Strict limits on quantity and quality of stormwater discharged
- Rigorous monitoring of stormwater discharges to ensure they are not degrading receiving water quality
- Green Infrastructure/Low Impact Development
- Watershed based permitting



With all that said...

- Earlier this year, the MS4 permittees found out EPA Region 6 nominated (and received HQ approval for) the MRG for one of three national pilot programs!
- The State has been facilitating planning meetings to encourage process development.
- The group has had a few planning meetings, including the first face to face meeting with the EPA Region 6 Permits Branch.
- Let's discuss current challenges...

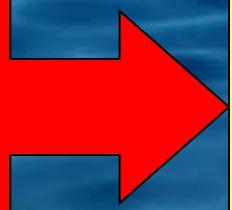


Watershed Based Permit???

- Geographic Focus
 - Nature's boundaries
- Address pollutants at the watershed level
 - Pick BMPs based on effectiveness through watershed
 - Greater involvement in problem solving/participation between agencies
- Partnerships/Stakeholder Involvement
 - Government, public interest groups, industry, academic institutions, private landowners, concerned citizens, etc.



Step 1:
Create Watershed
And Source Data
Inventories



Step 2:
Apply a Watershed
Permitting Analytical
Approach

Step 3:
Construct an NPDES
Watershed
Framework

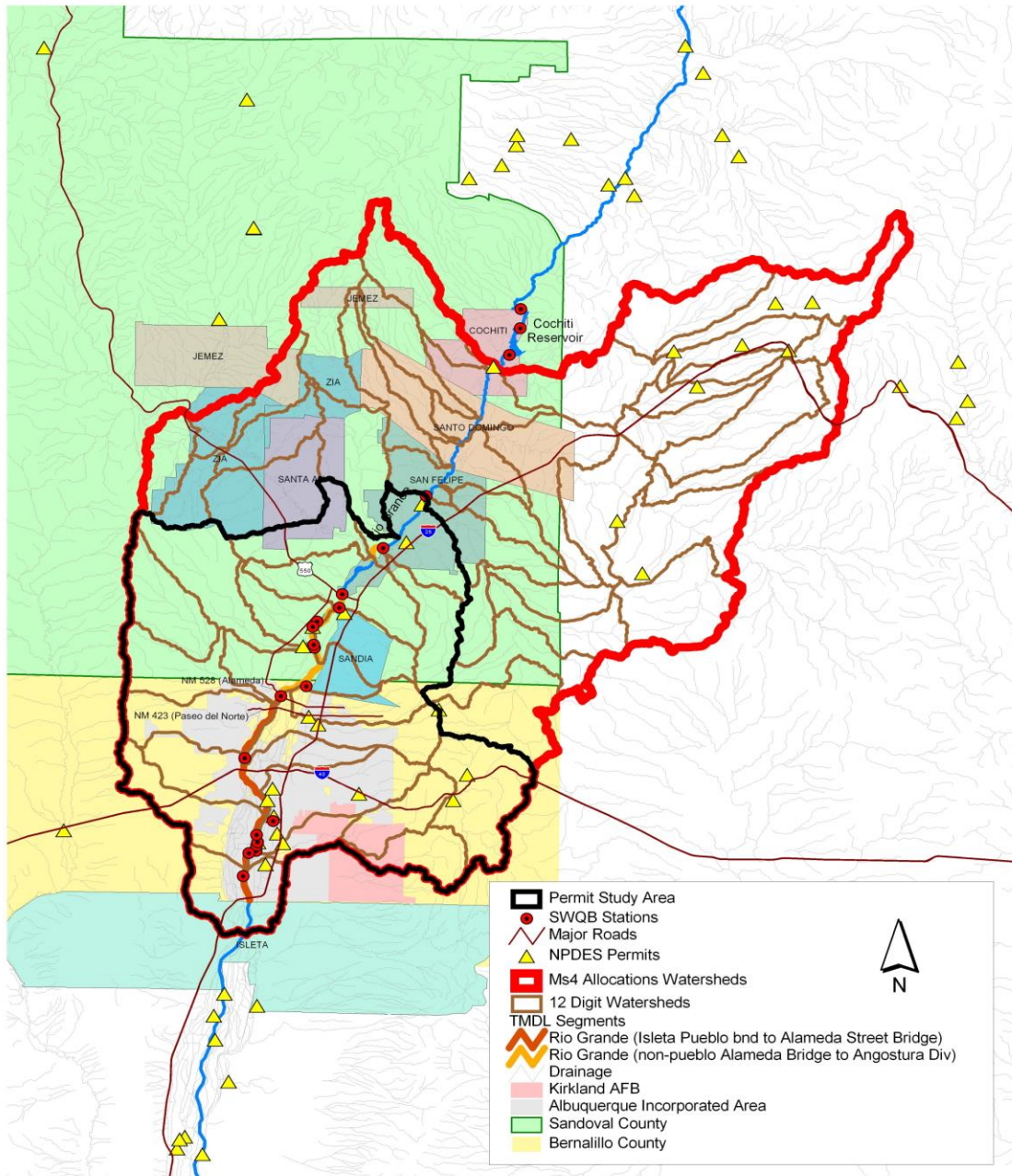


Challenges to Overcome

- What is the Watershed?
- Multiple agencies working together (>16 typical NPDES regulated entities); more with NPS?
- Selection of existing data and representative sampling points
- Costs
- Effective Monitoring
- Non-point source pollution contributions



Proposed MS4 Watershed Based Permit Pilot Area



- Red outline- area used in TMDL when assigning WLA for MS4s using JA approach.

- Black outline- permit study area as discussed during August 2010 meetings with EPA and NPDES Stakeholders.

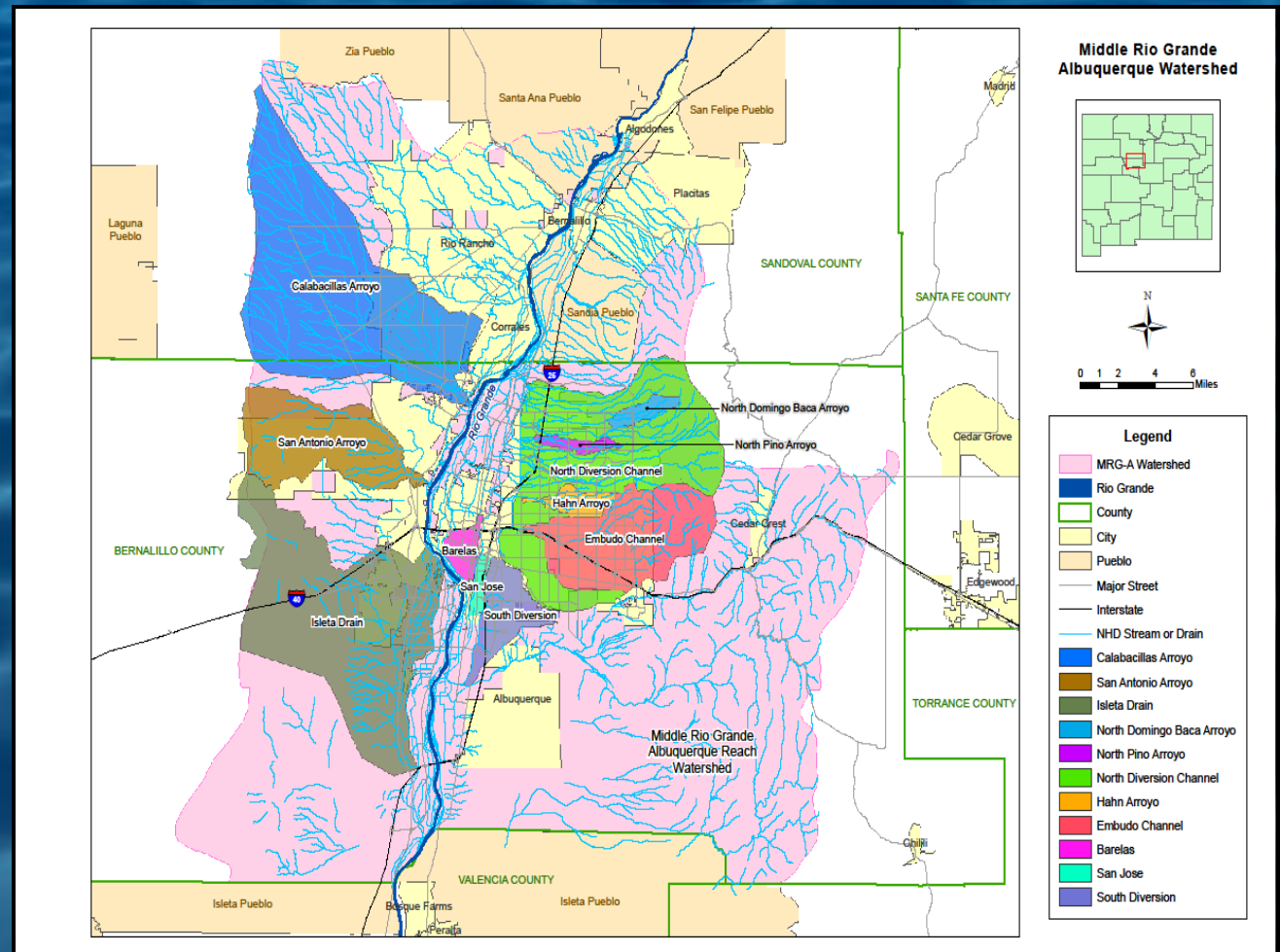
- Permit study area bounded by Angostura diversion, Isleta Pueblo, Sandia Mountains, and Rio Puerco drainage.



- Figure 1 from December 2008 WRAS developed by Ciudad SWCD.

- The WRAS was developed based on the 2002 MRG TMDL and the 2005 BST study focuses on outreach and data sharing.

- Ciudad is currently updating the WRAS to a WBP based on new EPA recommendations.



Multiple Stakeholders

- City of Albuquerque
- NM DOT District III
- AMAFCA (ABQ Metro Arroyo Flood Control Authority)
- UNM Dept. of Safety, Health and Environmental Affairs
- SSCAFCA
- Town of Bernalillo
- Sandoval County
- Village of Corrales
- Los Ranchos de Albuquerque
- City of Rio Rancho
- Bernalillo County
- Kirtland Air Force Base
- Sandia Pueblo
- Santa Ana Pueblo
- Isleta Pueblo
- Nonpoint source contributors?



Selection of Data and Sampling

- Compilation of existing viable data
- Select monitoring sites to bracket SW sources
- Data collection to monitor BMP effectiveness
- Long-term, continuous monitoring is ideal
- Concurrent rainfall and flow data is necessary
- Focused monitoring on recognized impairments



Costs

- Monitoring
- Better infrastructure management
 - Watershed based approaches to infrastructure (GI/LID)
 - More efficient water use
- Full cost pricing for revenue and conservation



Effective Monitoring

- Example – City of ABQ monitoring
 - Projected costs - \$595,696 in FY2011
 - DO study will add \$82,726
 - PCB study will add \$19,880
 - 5 outfalls
 - Monitor ~130 Pollutants
 - Most VOCs, Base/Neutral Compounds & pesticides are ND (76 pollutants).



Nonpoint Source Pollution & MS4s

- NPS cannot be regulated under NPDES, but it can be a significant source of pollutants.
- Can be difficult to get voluntary participation
- EPA discussed plans to host public meetings with interested stakeholders during the development of the permit.

How do we get NPS stakeholders invested in this process?



Questions?

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