

2017

Water Protection Advisory Board

ANNUAL REPORT FOR 2017

**SUBMITTED TO THE
ALBUQUERQUE CITY COUNCIL
BERNALILLO COUNTY COMMISSION
AND THE
ALBUQUERQUE BERNALILLO COUNTY WATER UTILITY
AUTHORITY GOVERNING BOARD**

Annual Report

2017

Prepared by the
Albuquerque and Bernalillo County
Water Protection Advisory Board

Members:

Jennifer A. Thacher, Chair

J. Steve Glass, Vice Chair

Suzanne Busch, P.E.

Matthew Earthman

Kerry J. Howe, Ph.D.

Julia Maccini

Russel D. Pederson, P.E.

Roland Penttila

Caroline Scruggs, Ph.D.

Acronyms

AFB	Air Force Base
AMAFCA	Albuquerque Metropolitan Arroyo Flood Control Authority
CAF	Corrective Action Fund
CCR	Consumer Confidence Report
EDB	Ethylene dibromide
EPA	United States Environmental Protection Agency
FAP	Fruit Avenue Plume
GPPAP	County Ground-Water Protection Policy and Action Plan
HB	House Bill
LUST	Leaking Underground Storage Tank
MCL	Maximum Contaminant Level
MNA	Monitored Natural Attenuation
MRG	Middle Rio Grande
NMPRC	New Mexico Public Regulation Commission
PCP	Personal Care Product
PIC	Policy Implementation Committee
PSTB	Petroleum Storage Tank Bureau
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
SB	State Bill
TCE	Trichloroethene
USDOT	United States Department of Transportation
USGS	United States Geological Survey
WBP	Watershed-Based MS4 Permit
WPAB	Water Protection Advisory Board
WQCC	Water Quality Control Commission
WQPPAP	Water Quality Protection Policy and Action Plan

This report presents an overview of the Water Protection Advisory Board's (WPAB) areas of focus, activities, and accomplishments during calendar year 2017. In addition to summarizing WPAB activities, this report offers a list of the threats to water quality in the basin in 2017, and a description of the WPAB's priorities for 2018.

Background

Starting in 1988, the City of Albuquerque (City) and Bernalillo County (County) passed resolutions calling for action to clean up and protect the Middle Rio Grande's (MRG's) shared groundwater resources. After five years of planning and research, the Albuquerque/Bernalillo County Ground-Water Protection Policy and Action Plan (GPPAP) was adopted by the County in November 1993, by the City in August 1994, and subsequently by the Albuquerque Bernalillo County Water Utility Authority (Water Authority) after its creation in 2003.

GPPAP was updated and revised in 2009 to include surface water quality protection activities, resulting in a single Water Quality Protection Policy and Action Plan (WQPPAP). Figure 1 shows the WQPPAP planning area within the MRG basin.

The WPAB with community members appointed by the City, County, and Water Authority was established to oversee implementation of the WQPPAP. The WPAB as established by ordinance is to:

- Study and advise the Water Authority, City, and County on surface and groundwater protection concerns;
- Oversee implementation of the WQPPAP;
- Periodically review and evaluate the effectiveness of the WQPPAP and make recommendations for changes, as necessary;
- Promote consistency in Water Authority, City, and County actions to protect surface and groundwater quality; and
- Advocate effective protection of surface and groundwater quality.

Additionally, the WPAB works with members of a Policy Implementation Committee (PIC) through which member agencies provide solutions aimed at improving public

health, protecting the environment, water quality and enhancing area residents' quality of life.

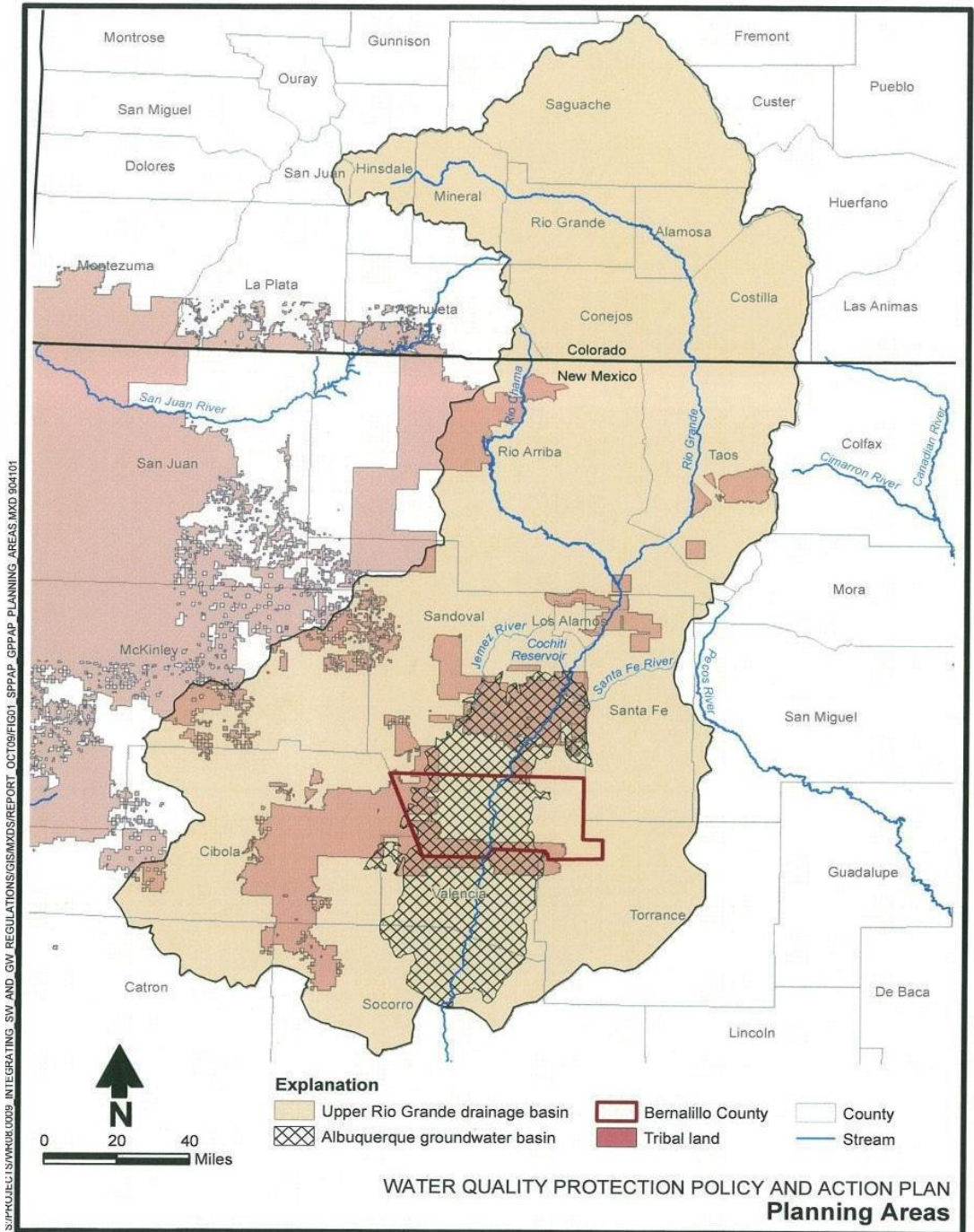


Figure 1

Figure 1. The WQPPAP Planning Areas include the Albuquerque groundwater basin and the Upper Rio Grande surface water drainage basin.

The WPAB consists of nine members: two appointed by the Water Authority; three appointed by the Mayor with the advice and consent of the City Council; and three appointed by the County Commission. One member is appointed jointly by the County Commission and the Mayor with the advice and consent of the City Council. A summary of the current members' qualifications is located in Appendix A.

The PIC is comprised of members from the City, County, and Water Authority staff that are involved in environmental protection, compliance reporting, water quality monitoring, and water resource planning activities. PIC members help the WPAB fulfill its purpose by providing technical assistance, administrative services, and staffing resources. Core PIC entities and agencies that implement activities related to the WQPPAP, in addition to other environmental and public health services, include:

Albuquerque Bernalillo County Water Utility Authority

- Compliance Division
- Water Resources Division

Bernalillo County

- Natural Resource Services

City of Albuquerque

- Environmental Health Department
- Stormwater Management Section
- Solid Waste Management Department

Water Protection Advisory Board Activities for 2017

The WPAB is required to hold meetings at least once a quarter, but usually holds meetings on the second Friday of each month, addressing specific water quality concerns included on an agenda agreed to by the board members. A work plan is developed and approved by WPAB members at the first meeting of each calendar year. The board receives much of its information from formal presentations by government agencies or environmental advocates conducting investigations or outreach activities on

topics of interest. In 2017, the WPAB meeting agenda topics included presentations in the following areas, consistent with the board’s established priorities for the year:

- I. Protection of groundwater quality in the Albuquerque Basin;
- II. Protection of surface water quality and watershed health, and;
- III. Fostering intergovernmental coordination, cooperation, and communication.

Below is a summary of significant action items taken by the board and technical presentations heard by members during the 2017 calendar year.

JANUARY

Board Actions:

Members elected Dr. Jennifer Thacher as Chair and Mr. Steve Glass as Vice Chair. Members also passed their Open Meetings Resolution for 2017 and discussed the drafts for the 2016 Annual Report, 2016 Work Plan, and 2016 Presentation Schedule. Additionally, members discussed the upcoming legislative session and potential funding concerns.

Discussion Summary:

Draft 2016 Annual Report included a discussion of presentation in 2017 including Oil and Gas activities during 2016; personal care products (PCPs) and pharmaceuticals; Kirtland Air Force Base (AFB) nitrate plume and Bulk Fuels Facility leak plume; and wildfire debris flows and watershed health. Members discussed specific presentations to include in the 2017 schedule, including the Rio Grande water quality project by the Nature Conservancy, Fire Scarred Land Modeling, underground storage tank updates, and Oil and Gas production.

FEBRUARY

Presentation Summary:

Update on Water 2120, Water Authority, Mr. Rick Shean

Mr. Rick Shean presented to the WPAB an update on the Water Authority’s “Water 2120” water resources management strategy. As part of the decadal update to their water resources management, Water 2120 expands the approach to include climate change data in future supply projections, groundwater management metrics, and portfolios of alternatives to fill supply gaps. Mr. Shean pointed to metrics of success from the previous strategy document such as the rising local water table, reduction in

the daily per capita water use by Water Authority customers, and the reuse systems that were implemented since the first strategy document in 1997. The Water 2120 policies were approved by the Water Authority's governing board on September 21, 2016 and include participation in and funding for watershed restoration activities, including tree-thinning activities managed by the Nature Conservancy through the Rio Grande Water Fund. The addition of watershed restoration is an expanded component of Water 2120 from previous strategy documents.

Risk of Pipeline Exposure and Catastrophic Releases to the Middle Rio Grande, Eastern Sandoval County Association, Ms. Jodilynn Ortiz

Ms. Jodilynn Ortiz presented to the WPAB the concerns of citizens in Placitas, New Mexico who are living near oil and gas pipelines that are at least 60 years old. There are five pipelines, four of which are interstate and the fifth is intrastate. The U.S. Department of Transportation (USDOT) oversees the four interstate pipelines and the New Mexico Public Regulation Commission (NMPRC) oversees the single intrastate pipeline. The concerns of Ms. Ortiz and Placitas residents is that a catastrophic failure of the pipelines would impact the entire water basin shared by Sandoval County, Bernalillo County, and the City of Albuquerque. Ms. Ortiz requested that members support her efforts to change the federal regulations related to replacement of pipes over 40years old and to provide for NMPRC shared authority for interstate lines in New Mexico.

Discussion Summary:

Member Roland Penttila asked that the issue regarding pipeline failure and regulation be discussed during the March meeting. Chair Thacher requested that a discussion for support of Ms. Ortiz's change to USDOT regulations be included in the March agenda.

MARCH

Board Actions:

Members voted to prepare a letter to be read at the Water Authority Governing Board meeting to recognize the progress made at the Kirtland AFB Bulk Fuels Facility leak site over the past two years.

Presentation Summary:

Kirtland AFB Bulk Fuels Facility Leak Site, Air Force Civil Engineering Center (AFCEC) and New Mexico Environment Department (NMED), Dr. Adria Bodour and Ms. Diane Agnew

Ms. Kate Lynnes, Senior Executive Services member and the senior program manager

for the Office of the Deputy Assistance Secretary of the Air Force for Environment, Safety, and Infrastructure introduced herself to the board, as it was the first WPAB meeting she had attended. Ms. Lynnes is assigned to the Kirtland AFB Bulk Fuels Facility leak project and serves as the U.S. Headquarters point of contact for the project.

Ms. Diane Agnew, hydrologist with the NMED, presented to members the NMED's recently released "2017 Strategic Plan" for the Kirtland AFB Bulk Fuels Facility leak. The NMED 2017 Strategic Plan adopted three strategies to protect the Water Authority's drinking water supply in the area of the contamination plume, including a robust monitoring and wellhead protection program; deployment of multiple cleanup strategies simultaneously and sequentially; and fulfillment of all requirements for public involvement. Dr. Bodour, environmental remediation specialist with AFCEC, provided the WPAB an update on progress, including plume capture results demonstrating that groundwater extraction wells were effectively influencing the ethylene dibromide (EDB) contamination plume away from Water Authority production wells. Dr. Bodour informed members that a fourth groundwater extraction well was planned to be operational in 2017 and that the groundwater treatment system had recently been expanded to increase treatment capacity. Dr. Bodour and Ms. Agnew informed the WPAB that AFCEC/Kirtland AFB submitted a Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Report to the NMED for review. They explained that the RFI outlined the nature and extent of contamination at the site and that an RFI addendum was slated for submittal in 2018. The RFI Report with addendum was the next step in the RCRA process towards a Corrective Measures Evaluation phase.

Discussion Summary:

Members discussed the progress at the Kirtland AFB Bulk Fuels Facility leak site and expressed that they were encouraged by the cleanup efforts.

Members discussed the request by Ms. Jodilynn Ortiz of the Eastern Sandoval Citizens Association to the WPAB to sign a letter to the USDOT requesting that regulations dealing with interstate oil and gas pipelines be changed. Members discussed that while they generally supported the topic, they were uncomfortable signing the letter in its current form. Members suggested that proposed regulatory language changes be clarified and that confirmation of state agency support be documented.

Mr. Rick Shean provided an update on 2017 state legislation regarding environmental and water quality related topics. Board members discussed New Mexico House Bill (HB) 468, which if enacted would replace the Water Authority's current board structure of appointed elected officials with a directly elected board.. Members also discussed Senate Bill (SB) 78, a bill inspired by the WPAB's recommendation for Bernalillo County and the City of Albuquerque to promulgate oil and gas industry ordinances.

APRIL - NO MEETING WAS HELD

MAY

Board Actions:

New member Julia Maccini was welcomed to the Board.

Presentation Summary:

Post-Fire Debris Flow Modeling, U.S. Geological Survey, Dr. Anne Tillery

Dr. Anne Tillery of the U.S. Geological Survey (USGS) provided information on post-wildfire erosion and debris flows. Dr. Tillery informed members that the USGS had analyzed available data to generate equations that can be used to predict where debris flows are mostly likely to occur after a wildfire. The USGS has two models available, one for probability and one for volume. Both models were combined so that land managers could make decisions faster and easier because there is limited time between the end of fire season and the start of the monsoon season. Dr. Tillery updated the WPAB that in 2014, the USGS automated the two models into an interactive web map. As soon as a fire is contained and the burn severity map is finalized, the information is live on the USGS Website at

https://landslides.usgs.gov/hazards/postfire_debrisflow/. Dr. Tillery added that the Missoula Fire Science Lab Fire Model (FSIM), which simulates thousands of fire seasons to predict annual burn probability, has been incorporated into the USGS pre-fire assessment. The result is a tool to determine the probability that given landscapes are going to burn in a study area; the new model was released in 2014.

Middle Rio Grande Surface Water Quality Sampling Update, USGS, Mr. Andre Ritchie and Ms. Kim Beisner

Mr. Andre Ritchie and Ms. Kim Beisner of the USGS presented information on surface water quality and monitoring performed on the Rio Grande and Rio Chama, beginning in 2004, in cooperation with the Water Authority. Mr. Ritchie informed the board that the purpose of the monitoring is to look at seasonal long-term trends in surface water quality upstream from the Water Authority's riverside diversion structure and to look at potential effects of natural and anthropogenic factors on water quality. Mr. Ritchie presented the results of the sampling, which indicate that the factors affecting water quality are: snow melt, irrigation diversion, return flows, waste water inputs, groundwater inflow, evapotranspiration, and reservoir operations. Sampling is conducted three times a year – spring snowmelt runoff period, irrigation/monsoon period, and fall/winter period. Samples are analyzed for major and trace elements, nutrients, dissolved organic carbon, mercury, total dissolved solids, microorganisms, suspended sediment, and field parameters. Sample locations in the Middle Rio Grande are also analyzed for organic compounds and radioisotopes. Untreated water taken

directly from the Rio Grande and Rio Chama show concentrations of these substances well below standards, while water from the Jemez River routinely exceeds the Maximum Contaminant Level (MCL) for arsenic.

Discussion Summary:

Vice Chair Glass stated that the data from the surface water sampling will be useful for a study being conducted by the Ciudad Soil and Water Conservation District in collaboration with Albuquerque Metropolitan Arroyo Flood Control (AMAFCA) to study regrowth of *E. coli* in river sediments. Vice Chair Glass suggested that Mr. Fluke from AMAFCA provide a presentation on AMAFCA's study, once it is completed. Mr. Mark Kelly stated that the Water Authority was conducting an internal study (revamped from 2012) to evaluate concentrations of pharmaceuticals and PCPs in water.

Author's Note: The Water Utility Authority shuts down the drinking water plant diversions whenever flows in the North Diversion Channel exceed 300 cubic feet per second. This action is taken in order to protect the water treatment plant from stormwater discharges.

JUNE

Board Actions:

The WPAB welcomed new member Matthew Earthman. Members voted unanimously to approve email discussions regarding the public comment period for the regulatory transfer of the Fruit Avenue Plume (FAP) Superfund site and to offer support via email for comments prepared by the City of Albuquerque and the Water Authority, if necessary.

Presentation Summary:

Water Authority's 2016 Consumer Confidence Report, Albuquerque Bernalillo County Water Utility Authority, Mark Kelly

Mr. Mark Kelly, Compliance Division Manager of the Water Authority, updated the Board with an overview of the Water Authority's Consumer Confidence Report (CCR). The CCR is required by the federal Safe Drinking Water Act and serves as a public notice of contaminants detected during the year and how the results compare to the analytes' respective U.S. Environmental Protection Agency (EPA) Maximum Contaminant Levels (MCLs). Mr. Kelly also noted that information regarding the WPAB is included as a regular feature in the annual CCR. Mr. Kelly updated members on the results of 2016 compliance sampling from both groundwater and surface water systems and he noted that there were no detections above the MCL for the required sampled analytes, including nitrate, gross alpha particle activity, and arsenic. Included in the presentation were the results for unregulated substances covered under the Unregulated Contaminated Monitoring Rule 3 (UCMR3). Mr. Kelly noted that some of the analytes

were detected above the minimum reporting level. Mr. Kelly also updated the Board that the Water Authority would soon be sampling for UCMR4 contaminants, (which includes 30 contaminants such as cyanotoxins) and doing voluntary sampling for PCPs.

Update on Fruit Avenue Plume Superfund Site and Local Perspectives, City of Albuquerque Environmental Health Department and Water Authority, Mr. Bart Faris and Mr. Rick Shean

Mr. Bart Faris of the City of Albuquerque Environmental Health Department and Mr. Rick Shean of the Water Authority updated the Board on the status of the FAP Superfund Site located in downtown Albuquerque. Mr. Faris described the FAP site, noting that the suspected source of contamination (the chlorinated solvent trichloroethene (TCE)) is disposal of dry cleaning fluid from a now-defunct dry cleaning business that was once located at the suspected source area. According to Mr. Faris, the FAP site has two primary dissolved-phase TCE plumes: a western plume located west of the site's pump-and-treat system; and an eastern plume that straddles the pump-and-treat system. Mr. Faris informed members that the FAP site was approaching a transfer of regulatory authority from the EPA-Region 6 office to the NMED. Mr. Faris noted that this transition of authority was agreed to at the initiation of the pump-and-treat system, which was adopted by the EPA for a limited 10-year period. Mr. Faris noted that the transfer includes a 30-day public comment period, a public meeting, and a Record of Decision amendment. Mr. Faris explained to members that the future remediation method at the FAP site will be monitored natural attenuation (MNA). Mr. Shean stated the Water Authority's position on the status of the FAP site, stating that the Water Authority did not support the MNA proposal. Mr. Shean added that MNA should not be considered until the contaminant mass was much smaller and to a point where the site was being "polished" to the drinking water standard.

Discussion Summary:

Mr. Kelly asked the Board for their opinion on the Water Authority sending a link to the CCR in their monthly billing statement in lieu of a hardcopy of the report or distribution of the report via email to customers who utilize their online account. Members expressed concerns about disadvantaged customers who do not have access to the internet or email and would therefore be unable to review the electronic reports.

Members discussed the need to be responsive to the 30-day comment period for the regulatory transfer of the FAP site between the EPA, Region 6 and NMED, even if the period began between WPAB meetings. Mr. Faris and Mr. Shean stated they would notify members once the public comment period was announced.

JULY

Presentation Summary:

NMED Update on Petroleum Storage Tank Bureau Activities and Leaking Underground Storage Tank Sites in the Albuquerque/Bernalillo County area, NMED, Mr. Jack Dickey
Mr. Jack Dickey, Geoscientist Supervisor with NMED Petroleum Storage Tank Bureau (PSTB), provided an update on the activities of the PSTB, the Corrective Action Fund (CAF), and leaking underground storage tank sites (LUSTs) in the Albuquerque and Bernalillo County areas. Mr. Dickey told members that NMED needed to reapply for primacy over its PSTB to the EPA which would require the state to adopt the Federal Underground Storage Tank Regulations and mentioned that the PSTB is currently updating their regulations with new provisions for above-ground storage tanks. Mr. Dickey also told members about the GoNM web-based mapping tool that allows users to view the status of corrective action activities at different sites. Mr. Dickey said that releases from petroleum storage tanks spiked in the early 1990s and have since declined. Mr. Dickey indicated that there have been several LUST sites where cleanup has been put on hold due to a decrease in funding of the CAF. Mr. Dickey concluded his presentation by providing an update on four LUST sites near Water Authority production wells but noted that the sites were not imminently threatening the drinking water supply.

NMED Update on the Source Water Protection Program and Rio Rancho's Source Water Protection Plan, NMED and Rio Rancho, Ms. Jill Turner and Mr. Antonio Griegos
Ms. Jill Turner of the NMED Source Water Protection Program provided the WPAB with an update on the NMED's Source Water Protection Program and the Source Water Protection Plans it was assisting different community's with across the state. Mr. Antonio Griegos of the Rio Rancho Water Utility provided a complementary presentation about the source water protection activities that Rio Rancho recently completed with assistance from the state's Source Water Protection Program. Ms. Turner told the Board about the source water protection planning assistance services that NMED provides to public water systems in New Mexico and explained that plan components included source water assessments, contaminant inventories, information about the water system, contingency and emergency plans, and recommendations and goals for future actions.

Mr. Griegos discussed the development of Rio Rancho's source water protection plan for that community's drinking water system. Mr. Griegos told the Board that during the plan development process, Rio Rancho became aware of threats to its production wells, including contamination from old residential septic systems traveling to the aquifer via old private domestic wells. Mr. Griego concluded by informing members that the source water protection planning process has been beneficial and will result in developing

better land management and water planning strategies.

Discussion Summary:

Members discussed the funding capacity of the state’s CAF and the ability of the program to fund cleanups within the City and County boundaries. Members also discussed the possibility of providing support letters for the PSTB in support of their renewal of primacy and funding.

Members discussed the application of the NMED Source Water Protection Program to the Water Authority Service Area. Mr. Rick Shean noted that the Water Authority was going to be updating the WQPPAP, which guides source water protection activities performed by City, County, and Water Authority staff.

AUGUST – NO MEETING WAS HELD

SEPTEMBER

Presentation Summary:

Update for the Middle Rio Grande Watershed-Based Municipal Separate Storm Sewer System (MS4) Permit: Debris Removal Summary and Water Quality Sampling, Interagency presentation, Ms. Kali Bronson, Ms. Kathy Verhage, and Mr. Patrick Chavez

Ms. Kali Bronson, Stormwater Program Compliance Manager with Bernalillo County Natural Resource Services; Mr. Patrick Chavez, Storm Water Quality Engineer with AMAFCA; and Ms. Kathy Verhage of the City Storm Water Quality Program provided the Board with an update on the implementation of the watershed-based MS4 permit for the MRG. This presentation met the MS4 permit requirement for a public meeting. Ms. Bronson said the MRG MS4 permit issued by the EPA is comprised of 18 permittees. She explained that as a result, the MRG MS4 permit offers an opportunity to collaboratively address stormwater-related issues on a watershed-scale. Ms. Bronson explained that the City and County, as the permittees with regulatory authority in the MS4 permit area, have developed stormwater quality and drainage ordinances geared to reduce pollutants in stormwater and to help prevent illicit discharges. Ms. Bronson informed members about studies examining local obstacles such as existing codes, ordinances, and planning document that impede the use of green infrastructure and low impact developments for managing stormwater runoff. Mr. Chavez presented the results of a study on debris removal and floatables found in stormwater discharge and also talked about the MS4 permittees’ efforts to track and reduce *E. coli* inputs to the river. Mr. Chavez added that current studies examining sources of *E. coli* have indicated that concentrations of *E. coli* are above the allowable threshold during the dry season and will likely cause the Rio Grande to exceed the established total maximum daily load

during the wet season when stormwater discharges occur. Mr. Chavez, Ms. Bronson and Ms. Verhage presented results from a public outreach and education event to understand how the public perceives stormwater quality, runoff, and sources of water contamination. Ms. Bronson concluded the presentation by reminding members that the annual report for the MS4 permit is currently available for public review and comment.

Discussion Summary:

Members discussed how the watershed-based permit is implemented compared to the individual permits; presenters elaborated that permittees met many times to divide responsibilities including public outreach and monitoring requirements. Overall, board members were pleased to hear that the MRG MS4 permit is the only successful MS4 watershed-based permit in the nation and implementation of the permit has been successful.

OCTOBER

Board Actions:

The board approved a motion to have the Water Authority draft a letter recommending legislative priorities to the Water Authority board during the 2018 legislative session.

Presentation Summary:

A Drone's Eye View: Using Drone Photography to Monitor Geomorphic and Vegetative Changes in Riparian Habitat Restoration Sites, SWCA Environmental Consultants, Mr. Brian Bader, Dr. William Whitehead, and Mr. Jesse Shuck

Mr. Brian Bader, Southwest Region Water Resources Director with SWCA Environmental Consultants, discussed monitoring the effectiveness of habitat restoration projects for the Rio Grande silvery minnow in the Middle Rio Grande using drone photography to monitor vegetation and geomorphic changes. Mr. Jesse Shuck informed members about flight operations and planning for the drone to collect the imagery data for modeling. Dr. William Whitehead discussed some of the many possibilities for modeling using the high-resolution imagery collected with the drone which included constructing digital elevation models, contour maps, point clouds, 3-D models, and even creating a normalized difference vegetation index using thermal and infrared imagery. Mr. Bader concluded by explaining that drone photography can be useful to help answer management questions related to restoration site viability and continuity as well as help to build a better understanding of how restoration sites and management decisions can impact endangered species, including the Rio Grande silvery minnow.

Update on the Water Quality Control Commission Proposed Regulation Changes, City of Albuquerque Environmental Health Department, Mr. Bart Faris

Mr. Bart Faris, Environmental Health Manager with the City of Albuquerque, discussed issues to be heard at the upcoming New Mexico Water Quality Control Commission (WQCC) hearing regarding revisions to current WQCC regulations, including discharge plans, the toxic pollutant list, variance petitions, groundwater numeric standards, vapor intrusion, and eliminating exemptions for small-basin recharge areas. Mr. Faris explained that the WQCC is looking to change the amendment process for discharge plans, which would increase the effluent limits, specify how to handle the introduction of new contaminants, and require notification of a change in discharge location that would affect the groundwater in a new location. Mr. Faris noted that the WQCC is interested in adding constituents to the toxic pollutant list and amending the numeric requirements, including the cancer risk and the toxicity level, for a compound to make the list. Mr. Faris also noted that the WQCC wants to change the groundwater numeric standards to be equal to the MCL for drinking water. Mr. Faris added that the WQCC wants to add provisions regarding vapor intrusion of organic chemicals affecting human health into NMED's regulations and would like to eliminate discharge permit exemptions for small-basin recharge projects.

Discussion Summary:

Members discussed the potential for drone photography to determine effectiveness of habitat restoration sites and the many useful applications of the drone imagery.

Members also discussed the implications of the upcoming WQCC hearings for proposed regulation changes. PIC members Liz Anderson and Mark Kelly of the Water Authority further explained to the board how the proposed changes in numeric standards and changes to exemptions for discharge permits would impact the Water Authority.

NOVEMBER

Board Actions:

Between the October and November board meetings, board members voted via email to approve a letter recommending legislative priorities for the 2018 legislative session. Board member Julia Maccini requested to ratify the email vote that occurred during the interim and the motion was unanimously approved.

Presentation Summary:

An Update on Groundwater Contamination Sites in Albuquerque and Bernalillo County, New Mexico Environment Department, Mr. Justin Ball

Mr. Justin Ball, Team Leader in the State Cleanup Section of the Ground Water Quality Bureau of the NMED, provided the Board an update on three main categories of groundwater contamination sites in the Albuquerque area that included nitrate sites,

chlorinated sites, and leaks from bulk fuels facilities. Mr. Ball told the Board about nitrate sites around Albuquerque that included the Kirtland Air Force Base nitrate plumes, the Western terrace site, Karler Packing Company, McCartharn Dairy, and the Mountain View nitrate plume. Mr. Ball also discussed several sites with groundwater contaminated by chlorinated solvents, which included Rek Chem, Sparton, Laun-Dry, Gulton Industries, and the former Digital Equipment Corporation site, which Mr. Ball noted was the most concerning groundwater contamination site in the Albuquerque area. Mr. Ball concluded his presentation by informing the Board about bulk fuels facility spills including Phillips 66 Company, Chevron Environmental Management, and a naphthalene plume at the BNSF Railroad Company.

Discussion Summary:

In addition to questions about the various groundwater contamination sites in the Albuquerque area, members discussed how these sites were mapped and what type of information was publicly available regarding the groundwater contamination sites. Mr. Ken Ziegler of the City Environmental Health Department informed members that he had created a map of groundwater contamination sites in Albuquerque that includes LUSTs, septic tanks, Superfund, RCRA sites, plume boundaries, and landfills and that the map would be shared with the board and PIC members after the meeting. Mr. Ball also added that NMED has a map of contamination sites, however it is in need of updating and there are plans to do so in the near future. The Board discussed how groundwater contamination sites in Albuquerque compare with other cities in the southwest. Chair Thacher requested a presentation for a 2018 WPAB meeting to compare the Albuquerque groundwater contamination sites to relevant cities, such as Phoenix, to better understand how other municipalities deal with threats to their drinking water sources.

DECEMBER – NO MEETING WAS HELD

Top Areas of Focus for Water Quality Protection in 2018

Members of the WPAB and PIC evaluated several identified threats to water quality in the MRG using the following criteria:

1. Nature and extent of contamination;
2. Proximity to drinking water supplies;
3. Regulatory effectiveness and efficiency; and
4. Costs associated with not eliminating the threat.

Below is a table of the topics of significant concern to the WPAB.

Area of Focus	Explanation
Kirtland AFB Bulk Fuels Facility (BFF) leak	Several production wells could be impacted, and corrective action activities should be monitored.
Sandia National Laboratory (SNL) / Department of Energy (DOE) Environmental Restoration Sites	The mixed waste landfill contains a mixture of toxic chemical and radioactive wastes in a legacy unlined disposal pit. DOE-SNL is currently implementing a long-term maintenance and management plan for this impoundment, of which the WPAB is pursuing regular updates. WPAB also wants to receive an update on the progress by DOE-SNL in mitigating the Tijeras Arroyo Groundwater contamination site.
Groundwater Contamination Sites	Several groundwater contamination sites are being investigated / remediated in the basin, including leaking underground storage sites, Superfund sites, and former industrial sites.
Stormwater Quality	Large stormwater discharge above the Water Authority's San Juan-Chama Drinking Water Project water diversion and MS4 permitting and Annual Public Meeting. Awareness of MS4 permit Notices of Intent as related to stormwater management and protection.
Watershed Health	Primary threat to surface water quality. No regulatory requirements for prevention activities, but debris flowing to drinking water plant diversion can be eliminated. Support of initiative for a Fire Protection and Rio Grande Water Fund. Understanding of stormwater effects and healthy watersheds.
Septic Systems	Septic systems are designed to seep contaminants; however, local ordinances are in place to minimize impacts.
Local Ordinances	Many water quality protection measures in place, but may need to be updated / revised to address new threats. Track potential need for Oil and Gas ordinances.
Oil and Gas Operations in the MRG basin	Review the environmental risks to water quality associated with oil and gas operations in the MRG basin and understand the regulatory process and compliance structure for this industry. Understand

	what is happening in the City and County to establish ordinances.
USGS Studies	Review USGS Albuquerque Basin groundwater model and how it can be utilized for understanding groundwater dynamics in current and future scenarios. Review the potential sources of nitrate contamination to the groundwater below Tijeras Arroyo as presented in a study being prepared by the USGS and funded by the U.S. Air Force. Review USGS surface water and stormwater monitoring studies in the MRG.
Intergovernmental Collaboration	Provide a forum to foster communication between local, state, and federal agencies. Review how agencies coordinate regulatory efforts, the status of the Watershed-Based MS4 Permit (WBP), and interaction between local and federal agencies. Advocate for continued communication across and within agencies to ensure successful implementation of WQPPAP and compliance with adopted policies.
Future Water Quality Issues	Receive presentations and updates on emerging contaminants and issues related to water quality. Identification of “future risk” and recommendation of actions to be taken.

Summary of Board Priority Activities for 2018

Based on the study and analysis of the topics and issues described above, the Board identified three areas of focus as priorities for calendar year 2018.

PROTECTION OF GROUNDWATER QUALITY

WPAB will continue to monitor the progress of groundwater remediation and investigation projects in the MRG, including the Kirtland AFB BFF leak, Superfund sites, and other contamination sites that threaten the Water Authority water supply. Board members will be provided updates on the corrective action contingency planning activities at the Kirtland AFB BFF leak as well as at environmental restoration sites at Kirtland AFB. Additionally, WPAB will be updated on SNL environmental restoration activities including the Tijeras Arroyo Groundwater contamination sites and mixed waste landfill. Board members will monitor oil and

gas operation activities in the MRG basin along with understanding the regulatory process and compliance structure and tracking of City and County ordinances. The Board will also review the implementation of Bernalillo County's new septic system ordinance. The USGS will update Board Members on the nitrate study along the Tijeras Arroyo in addition to a presentation on the USGS Albuquerque Basin groundwater model. In support of WQPPAP review and approval, as well as implementation, the Board will review the groundwater susceptibility analysis.

PROTECTION OF SURFACE WATER QUALITY AND WATERSHED HEALTH

WPAB will monitor the progress of the surface-water protection measures outlined in the WQPPAP. The Board will work with the PIC to help ensure adequate progress occurs on the policies and measures in the WQPPAP. Watershed health, implementation of the watershed-based municipal separate storm sewer system permit, and impacts of fire-scarred lands on surface water quality will be examined during the year. In support of the WQPPAP review and approval, as well as implementation, the Board will review the surface water susceptibility analysis. The Board will review and be updated on the results of surface water and stormwater monitoring results including the USGS studies, the MRG *E. coli* study, and the Safe Drinking Water Act PCP and UCMR4 sampling effort.

FOSTER INTERGOVERNMENTAL COORDINATION, COOPERATION, AND COMMUNICATION

More than a dozen local, regional, state, and federal agencies have the authority and responsibility to further the aims of the WQPPAP. Building on the efforts noted above, the Board intends to continue to serve as a forum and advocate for communication among these groups. Board members will review how agencies coordinate regulatory efforts, the status of the WBP, and interaction between local and federal agencies on resolving current and potential future threats to water quality in the basin.

APPENDIX A

Summary of Member Qualifications

Kerry J. Howe, Ph.D.

- Joint City/County appointment
- Second Term – January 2017 to January 2020
- Ph.D., Environmental Engineering; over 28 years of experience in water treatment technologies and professional engineering.

Russel D. Pederson, P.E.

- City Appointment
- First Term – December 2015 to December 2018
- Masters of Science, Civil Engineering; over 20 years of experience as a professional engineer manager and environmental health support.

Caroline Scruggs, Ph.D.

- County appointment
- Second term – October, 2015 to October, 2018
- Ph.D., Environment and Resources; over 20 years of experience in civil and environmental engineering and water resource planning.

Jennifer Thacher, Ph.D., Chair

- Water Authority appointment
- Second term – September 2015 to September 2018
- Ph.D., Economics; 17 years of experience in environmental economics, international water utility infrastructure, and watershed management.

Julia Maccini, JD

- County appointment
- First term – May 2017 to May 2020
- Doctor of Law; 10 years of experience in policy, legal, and real estate development.

Matthew Earthman (*former member*)

- Water Authority appointment
- First term – May 2017 to May 2020
- Masters of Science, Geochemistry; 7 years of experience in environmental site assessments, investigations, and remediation projects as well as analysis of

production well data and preparation of discharge permits.

Roland Penttila, P.E.

- City appointment
- First term – August 2016 to August 2019
- Bachelor of Science, Civil Engineering; retired after 33 years of experience as a register professional engineer, former supervising engineer for the City in Storm Water Management including compliance with EPA Municipal Separate Storm Sewer Systems Permit.

J. Steve Glass, Vice Chair

- County appointment
- Second term – August 2015 to August 2018
- Master of Science, Environmental Science; 40 years of professional experience in environmental chemistry and biology applications in environmental science and regulation.

Suzanne Busch, P.E.

- City appointment
- First term – August 2016 to August 2019
- Bachelor of Science, Civil Engineering; over 25 years as municipal professional engineer and project manager.

John S. Derr, Ph.D. (*former member*)

- County appointment
- Second term – August, 2015 to August, 2018
- Ph. D.; over 50 years of experience in studying and reporting geological, planetary and seismological phenomena.