Rupiper, Mike

From: Rob Montgomery <Rob@ma-rs.org>
Sent: Tuesday, November 29, 2016 7:46 AM
To: Kakuska, Michael
Cc: 'ROBERT C. PROCTER (RProcter@axley.com)'; Rupiper, Mike
Subject: RE: Groundwater Comments
Attachments: AppendixG_July2016_Draft RJM comments.pdf

Mike and Mike:

Attached are comments on chapters 7, 8 and 9 of the groundwater protection planning framework. In general, I think this is a terrific document. Very very informative reading for anyone that's interested in groundwater issues and groundwater management in Dane County or in other areas of the state for that matter.

From a comments standpoint, as you can see in the attachment, the biggest issue that I see is the recommendation that groundwater issues be considered in land use decisions at a local level – which has the potential of creating a "football" because it is a very technical issue and there really aren't any standards to apply. This comment would be applicable to general residential or commercial development that doesn't have a specific groundwater quality concern, but rather an incremental increase in potable water supply demand. I believe that a regional planning process to identify the issues especially with respect to groundwater recharge base flow, etc. is essential (now that we have the tools to do it) and that this water supply planning result should be incorporated into municipal water supply plans that have defined service areas for land use types. That way a particular site approval (for example a residential subdivision of 100 lots) does not become a political football with respect to various interpretation of regional groundwater management issues.

My other comment that might be worth some editorial consideration is in the chapter 6 discussion of groundwater policy and latest decisions. Clearly this is an evolving situation with the Atty. Gen.'s opinion and further issues in the legislature and elsewhere. So I think your summary discussion, which is good, should clearly identify the end date of the description so someone doesn't pick this up three years from now and think they have the latest update on state or local groundwater policy.

But in general, well done, good document, looking forward to talking with you this afternoon.

Regards

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From: Kakuska, Michael [mailto:MikeK@CapitalAreaRPC.org]
Sent: Monday, November 21, 2016 8:54 AM

Local Controls

Local units of government can voluntarily attempt to minimize the amount of salt applied to roadways. Many have evaluated and begun implementing various options to address this, such as purchasing new equipment (e.g., automated spreaders) and/or using alternative materials (e.g., sand).

Impact/Effectiveness

A survey of salt storage sites in the county revealed that most sites are protected by coverings and linings. Salt use is probably a greater threat to groundwater quality than salt storage in Dane County. Increasing chloride and sodium concentrations in Madison wells are associated with deicer use. Many communities have begun instituting salt reducing measures, but these do not appear to be keeping up with the increase in lane miles being traveled. Increasing salt concentrations in wells and surface water is cause for concern. Additional efforts are needed to reverse this disturbing trend.

Stormwater Management

We should support additional research and demonstration projects to provide safe winter driving conditions while reducing chloride and sodium application

State Controls

Proper infiltration of stormwater has many benefits, including maintaining groundwater recharge and reducing stormwater runoff and pollutant loads. In order to ensure safe drinking water, contaminants must be removed from stormwater before it reaches groundwater aquifers. Although soil is a tremendous natural filter, it cannot treat contaminated stormwater runoff beyond its limits. Pretreatment practices have a wide range of removal rates for different contaminants. This why it is important to design and implement practices to remove pollutants that take into account the potential contaminants in stormwater, site specific conditions, and maintenance needs.

Under NR 151.124 and 151.244, a construction site landowner must meet the performance standard for infiltration of runoff taking into account site restrictions. A technical standard has been developed to assist site designers in the assessment of the site and its adequacy in providing infiltration that is both protective of groundwater and practical to implement. The intent of the infiltration standard is to encourage infiltration of runoff. This requirement is tempered by a series of prohibitions and exemptions for the purpose of minimizing the risk of groundwater contamination and to address the practicality of implementation.

Local Controls

In 1989 the Legislature created the Dane County Lakes and Watershed Commission to serve as a coordinating and advisory agency for water quality issues within Dane County government (Wisconsin Act 324). Under the Act, the Commission may propose to the county board minimum standards for local regulations and ordinances for municipalities and the county to protect and rehabilitate the water quality of the surface waters and groundwater. In addition, CARPC provides review and approval of stormwater practices through its Urban Service Area amendment process. Dane County, local municipalities, and CARPC encourage and promote development practices that minimize surface water runoff and maximize infiltration and groundwater recharge. Several researchers have pointed out that stormwater infiltration practices that have been designed correctly pose little threat to the groundwater.[2,3,4] Current stormwater regulations and technical standards require pretreatment to remove contaminants prior to infiltration.

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[2] Pitt, R. et al. 1999. *Potential Groundwater Contamination from Intentional and Nonintentional Stormwater Infiltration.*
[3] Mikkelsen, P. et al. 1997. *Pollution of Soil and Groundwater from Infiltration of Highly Contaminated Stormwater.*
[4] Barraud, S. et al. 1999. *The Impact of Intentional Stormwater Infiltration on Soil and Groundwater.*

Impact/Effectiveness

With the emphasis on volume control BMPs in recent years, the issue of soil and groundwater contamination is gaining more attention. Recent research has improved the outlook on the risks of soil and groundwater contamination. Long-term (20 year or more) studies of groundwater below infiltration basins have shown no adverse effects from infiltrating stormwater.[5] Pretreatment of stormwater runoff from critical pollutant sources areas is required. The WDNR has developed program guidance and technical standards for best management practices for meeting the infiltration performance standard of NR 151.[6,7] By standard, no stormwater is infiltrated without treatment unless it is clean rooftop runoff.

The potential for groundwater table rise through extensive infiltration needs to be considered in planning infiltration facilities.

Well Construction and Abandonment

State Controls

The operation and design of public water systems is regulated by the WDNR under Chapter NR 811. This chapter requires the proper abandonment of all unused or unsafe private wells within municipal water service areas. Well construction, siting and abandonment is further regulated by the WDNR (chapter NR 812). This code prohibits the use of any well for disposal of sewage or for surface discharge drainage. Drillers of potable wells and pump installers need to be licensed, and well construction reports must be sent to the WDNR. Chapter. NR 141 establishes standards for designing, installation, construction and abandonment of groundwater monitoring wells.

Local Controls

Chapter NR 845, Wis. Adm. Code, was developed to allow for county administration of the private well construction and abandonment program. Dane County ordinance Chap. 45 details the county well construction and abandonment code. Improperly abandoned wells represent a real threat to groundwater that can be removed at relatively low cost. PHMD typically issues 60 to 70 abandonment orders each year.

The City of Madison has a local ordinance (Madison General Ordinance Sec. 13.21) which addresses well abandonment and operation permits within the Madison Water Utility service area. The ordinance provides that all unused and unsafe wells be properly abandoned. Owners of all other wells are required to obtain an operating permit from the utility which requires the owner to show that the well meets code and produces safe water. Well operating permits must be renewed every five years.

Impact/Effectiveness

Abandoned or unused wells pose a great threat to the safety and quality of groundwater drinking water supplies. An unused well provides a direct path for contaminants and pollutants to the underground aquifers that supply working wells. The WDNR considers a well to be permanently abandoned when it has been completely filled and sealed by a licensed well driller or pump installer using materials and methods as prescribed in section NR 812.26 of the Wisconsin Administrative Code. This generally means that the pump and any piping inside of the well casing have been removed and the well has been filled from bottom to top with proper filling materials, such as cement grout, concrete grout, concrete, a clay/sand slurry mix or, in some cases, bentonite chips. Some unsafe or unused wells are identified through complaints and are required to be abandoned as appropriate, but many wells may go undetected.

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[5] Emmons and Oliver Resources. 2012. *Update on the Science of Volume Control BMPs.*
[6] http://dnr.wi.gov/topic/Stormwater/standards/postconst_standards.html
[7] http://dnr.wi.gov/topic/stormwater/documents/InfiltrationPerformanceStandardGuidance.pdf

Unused wells are a direct line for contamination into clean ground water. The WDNR provides financial assistance for low income well owners to properly abandon unused private wells. The WDNR also provides Well Compensation grants for replacing, reconstructing or treating contaminated private water supplies that serve a residence or used for watering livestock. Well construction work must be done according to WDNR specifications and the contaminated well properly abandoned.

Groundwater Quantity

State Controls

The Groundwater Quantity Act (2003 Wisconsin Act 310) expanded the State's authority to consider environmental impacts resulting from certain high capacity wells. Under that law, proposed high capacity wells that are within 1200 feet of trout streams and other designated high quality waters, wells that could have significant impacts on a spring, and wells with a high water loss are subject to more rigorous evaluation. Since the 2004 adoption of Act 310, the scope of the WDNR's review of proposed high capacity wells has expanded even more as a result of the July 2011 Wisconsin Supreme Court decision in the *Lake Beulah* case and a September 2014 administrative law decision in the *Richfield Dairy* case. When reviewing high capacity well applications, WDNR staff now consider impacts to all waters of the state including streams, lakes, wetlands, municipal wells and private wells, cumulative impacts of the proposed well along with other wells on the same property and water withdrawals on other nearby high capacity well properties. If significant impacts are predicted, the well application may be modified or the approval may be denied.

In terms of current administrative code, NR 860 and NR 820 establishes the process, requirements, and criteria for water use permitting. NR 856 establishes requirements for registering water withdrawals and accurate reporting to support management efforts. NR 852 establishes a statewide water conservation and efficiency program, specifying mandatory measures in the Great Lakes Basin. In other areas of the state, the regulation applies to wells that would result in an average water loss greater than 2,000,000 gals./day over a 30 day period (although, relatively few wells exceed this amount).

Wisconsin law also requires a statewide water supply service area planning process for public water supply systems (Wis. Stats. 281.348). This is being promulgated through proposed rule NR 854. This rule would apply to water supply systems that serve a population of 10,000 or more. These systems would be required to be covered by an approved water supply service area plan by December 31, 2025.

The goal of the planning process is to help sustainably manage the state's waters to provide an adequate quantity and quality of water to customers; to prepare for increasing demands on the state's groundwater and surface water resources; and to protect springs, streams, wetlands, and other natural features. The law requires that communities assess the quantity and quality of available water supply through a practical planning process to ensure dependable, safe, and cost-effective water delivery to customers.

A municipal or regional planing process is the best approach to address water demand issues associated with increased development. Some communities have done this on an ad hoc basis

Local Contr

Local units of government in Dane County can voluntarily manage their water supplies to help minimize impacts to their environment and promote more sustainable water use. Significant collaborative efforts have been made among federal, state, and local entities to conduct groundwater modeling and planning activities in the region coordinated by CARPC. While much has been accomplished, more can be done in this regard.

Impact/Effectiveness

The WDNR has the "authority and general duty" to consider whether a proposed high capacity well may harm waters of the state.[8] The WDNR is also required to consider the cumulative impacts when deciding whether to approve, condition or deny high capacity well approvals.[9] The WDNR uses both its expertise in water resources management and its discretion to determine whether its duty as a trustee of the Public Trust resources is implicated by a proposed high capacity well permit application. The approvals are predicated on the facts and information presented to the WDNR by the well owner in the permit application, by citizens, and by other entities while the permit is under review. In Dane County significant state-of-the-art scientific tools have been developed (presented in this report) that can help inform communities and aid the WDNR in its decisions and approvals. Furthermore, continued regional collaboration will be needed among municipalities to minimize and mitigate the impacts of high capacity well withdrawals on the region's ground and surface waters, and promote more sustainable plans and practices in the future. Therefore, cooperative groundwater management policy in the region should include:

- a regional/watershed approach
- up-to-date hydrologic science
- increased focus on addressing cumulative impacts
- opportunities for water conservation and reuse
- monitoring and reporting
- adequate funding
- widespread participation and collaborative support

Good points – the issue is the lack of standards and whether concerns about high-capacity wells and water supply impacts in general should be applied to specific development project approvals.

Public Information and Education

A well-developed educational program concerning groundwater protection should continue to be pursued in Dane County. Only through an informed public will groundwater be adequately protected. Public education on the occurrence and movement of groundwater, potential pollution sources and groundwater protection strategies is necessary to maintain the high quality of groundwater in the county. Also, in many instances, public knowledge is imperative for complying with state and local regulatory programs pertaining to groundwater management.

Particular emphasis in groundwater educational programs should be placed on how land use activities affect drinking water quality. This is especially relevant in Dane County because all residents obtain their drinking water from groundwater supplies. If individuals understand that their drinking water supply may be at risk, they will probably be more inclined to prevent water pollution.
General as well as detailed groundwater educational programs should be promoted to the public. Various federal and state agencies have all developed general educational and resource materials that are available to Dane County residents. A good place to begin with groundwater education is in the school systems of the county, where environmental awareness may be instilled at an early age. The Groundwater Coordinating Council publishes the *Wisconsin Groundwater Education Resource Directory,* which is a compendium of the agencies, people and resource materials available for use in groundwater education.

In addition to general educational efforts, specific programs should be developed (or intensified) and targeted at groups that have a direct land use impact on groundwater. In many instances, this means the agricultural community. Thus, educational programs concerning agricultural best management practices should receive emphasis. Best management practices that minimize detrimental groundwater impacts include pest control strategies that limit pesticide use (e.g., crop rotation), proper pesticide container and

[8] Wisconsin Supreme Court *Lake Beulah* decision, July 2011 .
[9] Administrative Law Judge *Richfield Dairy* decision, September 2014.

Chapter 8: Groundwater Protection Recommendations

This chapter presents groundwater protection recommendations for each potential groundwater pollution source. They incorporate and expand upon much of the work and findings from previous plans and studies, as well as information from the supporting sections of this plan. These proposals provide a range of both regulatory and non-regulatory approaches to groundwater protection that should be promoted and implemented by various state and local organizations as early as opportunity and circumstance allow. Chapter 9 follows with selected short-range priority actions recommended for immediate management agency consideration.

Siting and Land Use Decisions Affecting Groundwater

Assessment of Conditions and Management Controls:

Sources of groundwater pollution are many and varied. Many activities that contribute to groundwater pollution are closely integrated into our economic and cultural way of life. The type, duration, and intensity of our use of the land will largely determine the risk posed to groundwater.

Thus, siting and land use decisions made by state agencies, and by county and local governments and private landowners, can have a significant effect on drinking water supplies. In addition, wellhead protection programs are an important approach to drinking water supply protection. Although these programs are being required by federal and state regulations, given the catastrophic impacts on a community resulting from contamination of their water supply, the costs of replacing a contaminated well, the near impossibility of cleaning up a contaminated aquifer, and the importance of citizen confidence in the safety of their drinking water, this preventive approach has been strongly supported by communities – basically giving them local control and responsibility for their drinking water supplies.

All good comments

Some aspects of wellhead protection programs, such as protecting important recharge or source areas, may need to extend beyond municipal boundaries, and will therefore require intergovernmental cooperation. Communities may want to consider extraterritorial zoning, intergovernmental agreements, open space plans, etc. Such an approach can reduce the risk of drinking water contamination and may avoid future infrastructure costs such as new wells or treatment.

Much of the information and analytical capacity for incorporating groundwater protection concerns into land use planning and decision making processes exists (e.g., hydrogeologic model, contamination risk maps, guidelines and criteria in **Reference Table 20,** etc.). Greater efforts are needed to ensure that impacts on groundwater quality are routinely and adequately considered in siting and land use decisions.

Recommendations:

1. All significant land use and siting decisions should include evaluation of potential groundwater and hydrologic impacts. Local units of government and other responsible agencies should seek CARPC staff participation, technical review and comment on land use proposals.

Re #1 - 3: There could be problems local commissions or boards trying to judge the relative significance of groundwater issues in site by site land use decisions given that there are no standards, and in general limited understanding of the issues. These issues should be considered in water supply planning by municipalities.
4 Correct

2. Specific language should be added to county and municipal zoning and subdivision ordinances to require that groundwater protection receives adequate consideration and assessment during the review and approval process. CARPC staff can provide technical assistance in this regard.

3. Local units of government with land use authority should be encouraged to collaborate with the county and formally incorporate groundwater impact assessment procedures into their land use decisions. In addition, municipalities should consider treating facilities with the potential to affect groundwater quality as conditional or prohibited uses in wellhead protection areas under a municipal wellhead protection ordinance. Also consider alternative options for plan implementation such as intergovernmental agreements and open space plans, CARPC staff can provide technical assistance in this regard.

4. CARPC staff should continue to provide assistance, through the Regional Hydrologic Modeling and Management Program, to local units of government and water supply agencies in Dane County, to maximize participation in the state Wellhead Protection Program and develop groundwater protection programs to protect all major water supply wells and aquifers in the region.

Solid Waste Disposal Sites

Assessment of Conditions and Management Controls:

A deterioration in groundwater quality has occurred near several closed landfills in Dane County. Strict regulatory requirements have been established for landfills since the 1980s; however, most closed landfills in the county were developed before these requirements were enacted. Groundwater quality is being monitored near only a small number of landfills, thus the extent of groundwater pollution may not be realized.

Recommendations:

1. The WDNR in conjunction with the Regional Planning Commission should establish a priority list for monitoring closed or inactive landfills.

   Highest priority for monitoring should be closed or inactive landfills located in areas of high or extreme contamination risk in municipal well protection zones. Subsequent priority should be for landfills in areas of moderate risk in well protection zones.

2. New solid waste disposal sites and landfills should continue to be located and designed to protect surface and groundwater. Proposed landfills should be located outside of municipal well protection zones and in areas of low to moderate groundwater contamination risk. WDNR and other responsible state agencies should seek CARPC staff participation, technical review and comment on proposed locations.

Stormwater Infiltration

Assessment of Conditions and Management Controls:

Significant progress has been made in Dane County and around the state to reduce or mitigate the potential increase in flood peaks through stormwater volume control ordinances. Maintaining pre-development infiltration promotes additional benefits as well, including maintaining stream baseflow, water temperatures, and also water quality considerations (since pollutant loading is a function of runoff volume).

Both NR 151 and Dane County Chapter 14 require development projects to maintain some level of pre-development stay-on volumes. Dane County's ordinance (mirrored by other municipalities in the county) is more stringent, requiring 90 percent of pre-development stay-on for all development types. Additional requirements common to both regulations effectively protect groundwater quality. Municipalities should consider maintaining 100 percent pre-development stay-on volumes, where opportunities exist, as well as enhanced recharge above natural rates to help make up for well water withdrawals in a community.

Recommendations:

DNR Technical Standards (and guidance) may not cover the topic or include latest research. Broaden the language

1. Stormwater Best Management Practice designers should consult WDNR Technical Standards for guidance and acceptability of infiltration practices and performance.

2. Municipalities should consider enhanced infiltration (above current levels) to help offset well water withdrawals in appropriate areas and where potential groundwater mounding/flooding will not negatively impact existing development or property.

3. Municipalities should actively encourage, promote, and track demonstration infiltration practices as part of current urban development in the region. Opportunities for public and private partnerships to undertake and assess new and innovative options for infiltration should be actively sought in partnership with CARPC. Practices such as porous pavement, roof gutters connected to infiltration trenches, and channeling of residual runoff to an infiltration pond could be installed and their effectiveness monitored.

Department of Safety and Professional Services

1. Consider and utilize the information, tools, criteria and guidelines identified in this plan in site approvals, or permits that could impact groundwater in Dane County. DSPS and other responsible agencies should seek CARPC staff participation, technical review and comment on proposed projects and locations.

2. Support and work with Dane County in implementing a program for tracking and ensuring that required inspection and maintenance is provided for all on-site wastewater systems in Dane County.

3. Increase support of monitoring and research directed at the groundwater impacts of on-site wastewater systems, and the development of practical and economical nitrogen-removing on-site systems.

Local Government

Dane County

Over-broad-need standards or process to be specified or there will be inconsistent and subjective application

1. Incorporate and utilize the information, tools, criteria and guidelines identified in this planning framework in all land use decisions, site approvals, or permits that could impact groundwater. Support and participate in the cooperative Regional Hydrologic Modeling and Management Program. Dane County should seek CARPC staff participation, technical review and comment on proposed projects and locations.

2. Add specific language to the county zoning and subdivision ordinances to require that groundwater impacts and protection receive consideration and assessment during the review and decision-making process. CARPC staff can provide technical assistance in this regard.

3. Work with WDNR, CARPC, and local units of government to develop effective wellhead protection programs and source protection plans for all municipal wells in Dane County, particularly where protection programs need to extend beyond local jurisdictional boundaries.

4. Maintain an inventory of livestock, feedlots, and manure storage facilities in Dane County.

5. Increase promotional and educational efforts directed at developing farm nutrient management plans and integrated pesticide management programs.

6. Continue implementation of the triennial inspection and required maintenance tracking system for all on-site wastewater systems in Dane County. Expand distribution of public informational materials on proper use and maintenance of on-site wastewater systems and private wells, including safe use and storage, collection and disposal of household hazardous materials and personal care products. Provide information, guidelines and contacts to rural homeowners for testing drinking water quality.

7. Continue to seek to assume responsibility for, or participate in, approval of septage landspreading sites.

8. Continue to expand and improve household hazardous waste programs, and emergency response capability for hazardous material spills.

Cities, Villages, Towns, and Local Water Supply Agencies

Over-broad-need standards or process to be specified or there will be inconsistent and subjective application

1. Conduct water supply service area planning in the region as required by Wis. Stats. 281.348 with assistance provided by CARPC and in collaboration with local management agencies.
2. Incorporate and utilize the information, tools, criteria and guidelines identified in this plan in all land use decisions, site approvals, or permits that could impact groundwater. Support and participate in the cooperative Dane County Regional Hydrologic Modeling and Management Program. Municipalities and water supply agencies should seek CARPC staff participation, technical review and comment on proposed projects and locations.
3. Add specific language to the local zoning and subdivision ordinances to require that groundwater impacts and protection receive consideration and assessment during the review and decision-making process. CARPC staff can provide technical assistance in this regard.
4. Work with WDNR, Dane County and CARPC to develop effective wellhead protection programs and source protection plans for all municipal water supplies. Fix wells with faulty casing separating deep and shallow aquifers to help prevent downward movement of contaminants.
5. Work with DATCP and WDNR to expand monitoring and testing of older underground tanks in municipal well protection zones and areas of high or extreme contamination risk.
6. Continue and expand efforts to reduce the groundwater impacts of salt storage and use and snow removal practices.
7. Cooperate with WDNR and utilize the information and criteria in this plan and through the CARPC Regional Hydrologic Modeling and Management Program in locating and designing new high-capacity wells, in order to minimize adverse groundwater impacts.
8. Continue to work with WDNR, Dane County and CARPC to incorporate stormwater infiltration practices into local erosion/stormwater control ordinances that will protect groundwater.
9. Cooperate in expanding and improving household hazardous waste collection and public information programs, and in improving emergency response to hazardous materials spills.

Capital Area Regional Planning Commission

Absolutely!

How can this be put into the CARPC budget?

1. Conduct water supply service area planning efforts in the region as required by Wis. Stats. 281.348. More specifically, promote proactive and collaborative regional groundwater management planning among communities to address water availability and sustainability issues related to both ground and surface water resources.
2. Assist municipalities and resource management agencies consider and utilize the information, tools, criteria and guidelines outlined in this plan in all land use decisions, site approvals, or permits that could impact groundwater. These include high-capacity well proposals, WPDES permits for wastewater facilities discharging to groundwater, biosolids and septage land spreading sites, stormwater infiltration practices, sanitary landfills, large manure storage lagoons or feedlots, large unsewered subdivisions, prioritizing remediation sites and monitoring, etc.

Table 30
Groundwater Protection Roles and Responsibilities

Potential Pollution Sources		Regulatory						Non-Regulatory					Other				
	Groundwater Management Controls	Permits	Site Approval	Land Use Controls	Construction Standards	Use Restrictions	Inspection & Testing	Guidelines/Criteria	Minimizing Input of Pollutants	Education	Voluntary BMP	Governmental Coordination	Training & Demonstration	Monitoring	Research & Inventory	Remedial Action	Emergency Response
Waste Disposal	Solid Waste Disposal Sites	S	S	L	S		SI	SI	L			SL		SI	SI	SL	
	Land Application of Wastewater	S	S		S		SL	S						SI	SI	L	
	Sanitary Sewers	S		SL	SL		S	S				SL				L	SL
	On-Site Wastewater Systems	SL	SL	sL	S		L	L		L		SL			SL		
	Sludge/Biosolids Application	S	S	S			S	S				SL		L	SL		
	Septage Applications	S(L)	S(L)	S(L)			S(L)	S(L)				SL			S(L)		
Agriculture	Manure Storage	L			SL			sL		sL	L				L		
	Fertilizer & Manure Spreading							sL		sL	L		SL				
	Pesticide Application					S		SL	L	SL	L		SL	S			
	Irrigation	S			S		S			sL	L						
Hazardous Materials	Household Hazardous Materials								L	sL							
	Above-ground Storage	S			S		L	S		SL		SL				SL	SL
	Underground Storage	S			S		SI	S		SL		SL		SL	S	SL	SL
	Transmission Pipelines	F			F		F	F								S	S
	Spills											SL	SL	SL	S	SL	SL
	Junkyards/Salvage Yards	L		L			L										
Other	Salt Storage & Deicing					S	L	S		L	L	L			SL		
	Well Construction & Abandonment	SL	SL		SL		SL	S		SL		L			L		
	Groundwater Quality and Quantity Management	SI	SI	XX				sL		sL		L		S	sL	L	

F = Federal Role
S = State Role
L = Local Role (including CARPC)
= Priority Action Needed

This is the section of concern described above

L or S = Primary Role
I or s = Assisting or Advisory Role
(L) = Possible Future Regulatory Program