Briefing on Watersheds Recommended by Regional Committees for Designation as Critical Water Planning Areas.

For the Statewide Water Resources Committee

April 28, 2010

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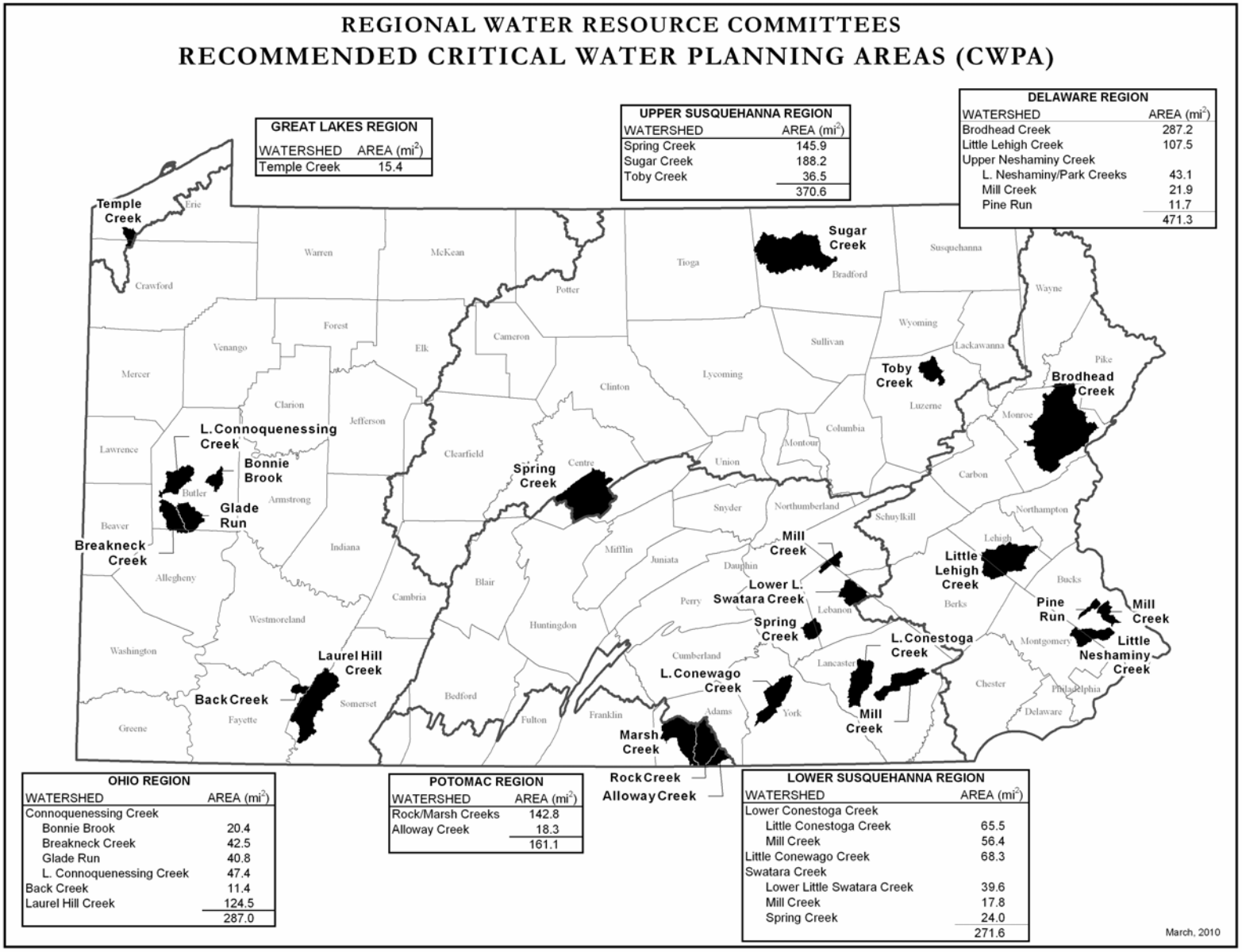

REGIONAL WATER RESOURCE COMMITTEES
RECOMMENDED CRITICAL WATER PLANNING AREAS (CWPA)
GREAT LAKES REGION
WATERSHED AREA (mi²)
Temple Creek 15.4
UPPER SUSQUEHANNA REGION
WATERSHED AREA (mi²)
Spring Creek 145.9
Sugar Creek 188.2
Toby Creek 36.5
370.6
DELAWARE REGION
WATERSHED AREA (mi²)
Brodhead Creek 287.2
Little Lehigh Creek 107.5
Upper Neshaminy Creek
L. Neshaminy/Park Creeks 43.1
Mill Creek 21.9
Pine Run 11.7
471.3
Temple Creek
Sugar Creek
Toby Creek
Brodhead Creek
L. Connoquenessing Creek
Bonnie Brook
Glade Run
Breakneck Creek
Spring Creek
Mill Creek
Little Lehigh Creek
Lower L. Swatara Creek
Pine Run
Mill Creek
Spring Creek
L. Conestoga Creek
Little Neshaminy Creek
Laurel Hill Creek
Back Creek
L. Conewago Creek
Mill Creek
Marsh Creek
Rock Creek
Alloway Creek
Erie
Warren
McKean
Tioga
Susquehanna
Wayne
Crawford
Potter
Bradford
Forest
Cameron
Wyoming
Sullivan
Lackawanna
Pike
Venango
Elk
Mercer
Clinton
Lycoming
Luzerne
Monroe
Clarion
Jefferson
Columbia
Montour
Lawrence
Clearfield
Union
Carbon
Centre
Butler
Armstrong
Snyder
Northumberland
Schuylkill
Northampton
Beaver
Indiana
Mifflin
Juniata
Dauphin
Lehigh
Allegheny
Blair
Perry
Berks
Bucks
Cambria
Lebanon
Westmoreland
Huntingdon
Montgomery
Washington
Cumberland
Lancaster
Chester
Somerset
Bedford
Philadelphia
Greene
Fayette
Fulton
Franklin
Adams
York
Delaware
OHIO REGION
WATERSHED AREA (mi²)
Connoquenessing Creek
Bonnie Brook 20.4
Breakneck Creek 42.5
Glade Run 40.8
L. Connoquenessing Creek 47.4
Back Creek 11.4
Laurel Hill Creek 124.5
287.0
POTOMAC REGION
WATERSHED AREA (mi²)
Rock/Marsh Creeks 142.8
Alloway Creek 18.3
161.1
LOWER SUSQUEHANNA REGION
WATERSHED AREA (mi²)
Lower Conestoga Creek
Little Conestoga Creek 65.5
Mill Creek 56.4
Little Conewago Creek 68.3
Swatara Creek
Lower Little Swatara Creek 39.6
Mill Creek 17.8
Spring Creek 24.0
271.6
March, 2010

The Chestnut Ridge Chapter of Trout Unlimited submitted a nomination for Laurel Hill Creek for its designation as a Critical Water Planning Area on April 16, 2008. Already underway at that time was the first phase of a "Water Resources Management Plan" for Laurel Hill Creek sponsored by the Somerset County Conservation District with funding coming from a 2006 Environmental Stewardship grant. Phase II is underway now along with a separate funded Storm Flow and Sediment Analysis Study.

Description of Watershed and Water Uses

Laurel Hill Creek is a predominately undeveloped, forested watershed in mostly Somerset County that is listed in Chapter 93 as HQ-CWF with four EV tributaries. Sixty eight percent (68%) of registered water use is estimated as coming from public water of which 38% of registered water use comes from groundwater, 52% from surface water and 10% not distinguished. Other major water use in the watershed includes recreational at ski resorts and quarry use.

Of about the 467 million gallons used in 2009 by Somerset Borough Municipal Authority, 209 million gallons or 44% came from Laurel Hill Creek which is exported outside the Laurel Hill Creek Watershed. An underdetermined amount of water is imported into Laurel Hill Creek for snowmaking operations from the Pritts Spring in the Back Creek tributary of Indian Creek to the west of Laurel Hill Creek.

Issues and Concerns

Concerns of water exportation documented in Trout Unlimited's April 2008 nomination including jeopardy to aquatic communities, economic development, health and safety. 2004 Rivers Conservation Plan identified issues including lower recent stream flows, poor water quality in certain tributaries (303(d) listing from siltation, nutrients, low dissolved oxygen). Documented issues with Somerset Borough water withdrawals from Laurel Hill Creek Reservoir in 1994, 1995, 1998, 1999, 2001 and 2002, withdrawals were made over multiple continuous days when streamflows at dam were less than minimum pass-by requirements of 1.37 MGD. Somerset Borough now may receive up to 900,000 gallons per day from the Quemahoning Reservoir to supplement their other sources.

Results from Screening and Data Verification

The screening process, performed with the assistance of the USGS showed 19 of 26 "pour points" having negative Screening indicators values through most of the main stem downstream of LHC Reservoir. Changes in water demands and withdrawals from LHC resulting from water division through a new Quemahoning pipeline to Borough of Somerset was not addressed, but will be examined in the Water Management Plan that is underway.

Summary of Public Comments

A letter from Somerset Borough expressed opposition for technical reasons including items on Q7-10, gaging records, and regression analyses. One letter of support from Trout Unlimited and seven testimonies supporting designation that spoke of quality and quantity issues, recreation value of waters and impacts of withdrawals.

General Responses to Comments

Each item from Somerset Borough has been considered and addressed. The issue items, independently or collectively did not provide sufficient evidence that LHC does not meet criteria.

Ohio Basin - Back Creek

Description of Watershed and Water Uses

Back Creek is an 11.4 mi^2 tributary to the Indian Creek Watershed located in Fayette County across the divide west of Laurel Hill Creek. It is primary an undeveloped, wooded watershed that supplies the highest quality water within the Indian Creek Watershed. Withdrawals are made from the Pritts Spring within Back Creek and transferred over to the Laurel Hill Creek Watershed for seasonal use at Seven Springs Mountain Resort.

Issues and Concerns

The quantity and quality of the water from Back Creek is of importance for water supply. Indian Creek Valley Water Authority is the main water supplier in Indian Creek and relies on several springs in Back Creek since the rest of Indian Creek has AMD problems. Increased demand for exported water use for resort use is a concern.

Results from Screening and Data Verification

The screening process, performed with the assistance of the USGS, located three of four pour points having negative Screening indicators in Indian Creek within the Back Creek watershed.

Summary of Public Comments

The Indian Creek Valley Water Authority testified that further investigation is needed to determine all commercial public uses and recreational activities and supportive testimony from the Fayette County Conservation District.

General Responses to Comments

None required.

Ohio Basin - Tributaries to the Connoquenessing Creek

- Little Connoquenessing Creek
- Breakneck Creek
- Glade Run
- Bonnie Brook

Description of Watershed and Water Uses

The Connoquenessing is a developing 334 mi^2 watershed primarily in Butler County that encompasses the City of Butler. 63% of water use is for water supply of which 73% comes from surface water.

Issues and Concerns

The 2008 Watershed Conservation Plan identified issues with storm water and water quality of Connoquenessing. Water suppliers may struggle to find clean drinking water free of contamination from AMD and other pollutants. Mandatory restrictions were in place in 2001 by PA American Water and Evans City Borough. Importation of water by PA American from Allegheny may reduce problems.

Results from Screening and Data Verification

The screening process, performed with the assistance of the USGS, found 27 of 46 pour points in Connoquenessing having negative Screening indicators. Data verification work supports four tributaries for

designation – Breakneck Creek, Glade Run, Bonnie Brook and Little Connoquenessing. With some variation, each of the tributaries had negative balances primarily driven by estimated commercial, industrial and golf course water use. Within these areas is the current and highest potential future rate of development and water use.

Summary of Public Comments

While there was no supporting or opposing public comment received on the Connoquenessing, the Ohio Regional Committee supported the appropriateness for designation and that planning be done on all four tributaries at the same time rather than separately.

General Responses to Comments

None required.

Great Lakes Basin - Temple Creek

Description of Watershed and Water Uses

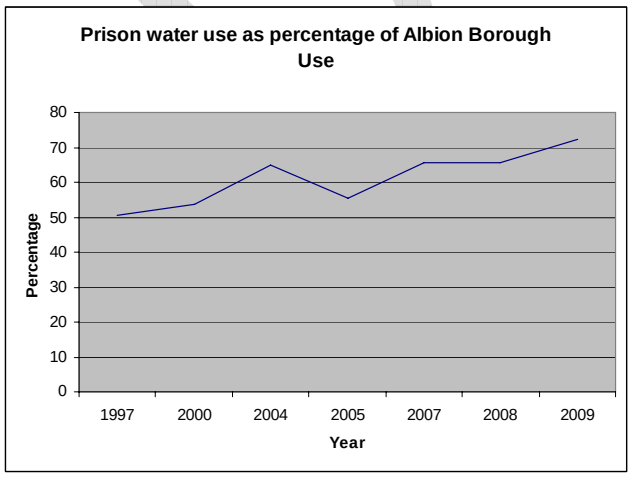
Temple Creek is a 15.4 mi2 rural watershed whose mouth is in the southwest portion of Erie County, east of Albion Borough.

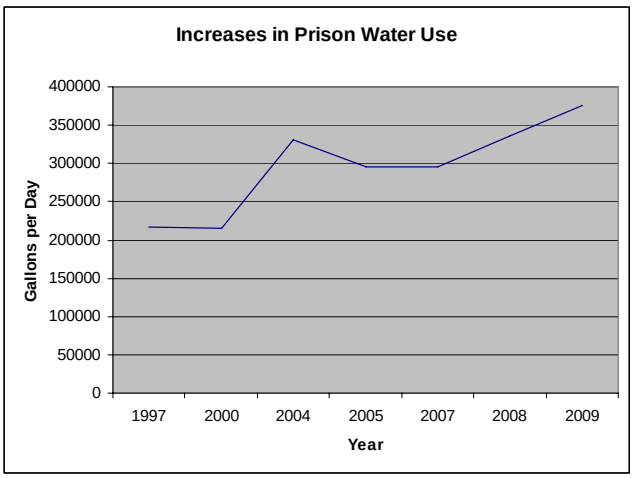
Issues and Concerns

Concern has been expressed over water supply demands from an increasing population at the Albion State Correction Facility located to the west of the watershed. The prison is served water by Albion Borough from wells within the Temple Creek watershed. However, discharges from the prison don't return back to Temple Creek. There is concern that replacement of the existing Albion groundwater wells would be difficult should they be impacted by future development.

Results from Screening and Data Verification

The screening process, performed with the assistance of the USGS, found all three of the "pour points" established in the watersheds having negative Screening indicators.
During data verification, information indicated that the prison population is at 125% of capacity as of July 2009. The graphs below indicate continued demand at the correctional facility.





Source of Information: Annual Water Use reports from Albion Borough

Summary of Public Comment

No public comments were given either in writing or by testimony

General Responses to Comments

None required.

Lower Susquehanna - Little Conewago Creek

Description of Watershed and Water Uses

The Little Conewago Creek, located in York County, is a 65.5 mi^2 rural, agricultural watershed having a Chapter 93 Trout Stocked Fishery designated use with increasing development in its headwaters. Water use (registered and estimated) in the watershed is a mixture of public water supply, industrial, commercial (golf courses), agricultural and quarry related.

Issues and Concerns

The Susquehanna River Basin Commission, in its 2005 Groundwater Management Plan for the Susquehanna Basin, mapped out the upper portion of the Little Conewago Creek watershed within a Bonneauville Shale Belt "Water Challenged Area", or an area where natural conditions severely limit the availability of groundwater resources to support growth and development. A Rivers Conservation Plan for the entire Conewago Creek identified a number of environmental concerns that may apply to the Little Conewago Creek.

Results from Screening and Data Verification

The screening process, performed with the assistance of the USGS found 3 of the 13 "pour points" established in the watershed having negative Screening indicators. These negative values were driven primarily from pubic water supply withdrawals with discharges located further downstream. Reducing estimated agricultural withdrawals in the headwaters would change two pour points in the upper part of the watershed from (+-)20% of balance to positive Screening indicators.

Summary of Public Comments

No public comments were given either in writing or by testimony

General Responses to Comments

None required

Lower Susquehanna - Tributaries to the Conestoga River

- Little Conestoga Creek
- Mill Creek

Description of Watershed and Water Uses

The Little Conestoga Creek (65.5 mi^2) and the Mill Creek (56.4 mi^2) are two tributaries to the Conestoga River (476 mi^2) within the heart of Lancaster County's urbanized area. Water use in both is primarily for public water supply, agricultural as well as other uses, with the majority of water

coming from ground water sources. The screening and verification work estimated more industrial water use in the Mill Creek than the Little Conestoga Creek due to its larger industrial base along the Leola and New Holland corridor.

Issues and Concerns

Both tributaries are within the areas of the Conestoga River that have been listed as impaired on the Clean Water Act 303(d) list primarily for nutrients and sediment. The Little Conestoga Creek has a Warm Water Fisheries designated use with the Mill Creek having both Warm Water Fisheries, Cold Water Fisheries and a segment of HQ-CWF designated use in the headwaters. No documents on water availability issues were identified outside the Screening and Data Verification work.

Results from Screening and Data Verification

Little Conestoga Creek: The screening process, performed with the assistance of the USGS found 13 of the 17 "pour points" on the Little Conestoga Creek having negative Screening indicators. Withdrawals by public water suppliers along Swarr Run and the Little Conestoga Creek affected all 13 negative pour points with discharges exported to the Susquehanna River, outside of the tributary as well as the overall Conestoga River watershed.
Mill Creek: Screening showed 6 of 12 pour points as negative with 3 points within (+-20%) of balance. As with the Little Conestoga Creek, public water supply withdrawals had discharges being exported outside of Mill Creek to the Conestoga River. Estimated industrial water use was also a factor of negative indicators. A large industrial base in this watershed may indicate some underestimating of industrial use.

Summary of Public Comments

There were one written comment and one oral testimony in support of the designations by two members of the Lancaster County Planning Commission. Both supported designation that health of watersheds is vital in terms of continued implementation of comprehensive planning and importance to growth management strategies.

General Responses to Comments

None required.

Lower Susquehanna - Tributaries to the Swatara Creek

- Spring Creek
- Lower Little Swatara Creek
- Mill Creek

Description of Watershed and Water Uses

Spring Creek (24 mi^2), Lower Little Swatara Creek (39.6 mi^2) and Mill Creek (24 mi^2) are three somewhat geographically separate tributaries to the Swatara Creek within Dauphin, Lebanon, and Schulkill Counties. Water use in Spring Creek is primarily from industrial use in the Hershey area. In the Lower Little Swatara Creek there is significant industrial water use from facilities located within the Elizabeth Run watershed in the vicinity of Fredricksburg. Water use in Mill Creek is solely related to the water supply for the City of Lebanon drawn from the Siegrist Reservoir. Both Spring Creek and the Lower Little Swatara Creek have Warm Water Fisheries designation with Mill Creek having a Cold Water Fisheries downstream of the dam and EV designation above.

Issues and Concerns

Spring Creek and Lower Little Swatara Creek: The Susquehanna River Basin Commission (SRBC) identified the Hershey area (which includes portions of Spring Creek) and the Fredricksburg area as "potentially stressed" in their 2005 Groundwater Plan for the Susquehanna Basin. A Potentially Stressed Area (PSA) is where existing or projected withdrawals and uses are anticipated to exceed long-term sustainability of the groundwater resource or cause conflicts among users. The SRBC, based on their knowledge of the area, recommended the Lower Susquehanna Regional Committee consider the Lower Little Swatara Creek.

Mill Creek: the Mill Creek is the watershed of the Siegrist Reservoir, from which, in addition to water from Swatara Creek, the City of Lebanon depends on for water supply. A 2003 Army Corps of Engineers water supply study of the Swatara Creek Watershed in behalf of the SRBC, Capital Region Water Board and the DEP, identified the Lebanon Municipal Water Authority as the purveyor that could be most affected by water shortages under record drought conditions with current demands resulting in supply shortages. The report also indicated that based on potential water shortages, required flow augmentation (from the reservoir) may exceed Siegrist reservoir storage for current and future demands.

Results from Screening and Data Verification

Based on screening and data verification by the USGS, all three tributaries exhibit several pour points having negative Screening indicators. On the Mill Creek, the Screening Indicator Percentage had a value up to -658% which may corroborate the Corps assessment.

Summary of Public Comments

No public comments were given either in writing or by testimony

General Responses to Comments

None required

Delaware Basin - Brodhead Creek

Description of Watershed and Water Uses

The Brodhead Creek is a 288 mi^2 watershed, forested in the headwaters with urbanization in the lower end (Stroudsburg area) that includes the McMichaels, Pocono and Marshalls Creeks. The watershed is located primarily in Monroe County. Streams primarily have HQ-CWF designation with a number of EV segments. Sixty two percent (62%) of water use is estimated for public water supply for which 46% of all water use estimated from surface water and 25% estimated from groundwater. Other uses come from industrial, commercial and mineral sectors.

Issues and Concerns

An extensive amount of study and research has and continues to be invested in the Brodhead Creek and its tributaries. The 2002 Brodhead Creek Watershed Conservation Plan identified a number of issues and concerns including unplanned growth, diminished water quality, polluted storm water, development on wetlands, weak municipal regulations, and preservation of open space. One goal for the plan pertinent to this effort relates to water quality and quantity – the maintaining and improving water quality throughout the water shed to insure that adequate quantity of surface water and groundwater is maintained. Throughout the screening and verification process, DEP was made aware

of concerns over preservation and improvement of the water resources in the region recognizing the substantial levels of existing and projected population and development growth.

Results from Screening and Data Verification

Based on screening and data verification by the Delaware River Basin Commission (DRBC), the Brodhead Creek exhibited 11 pour points in 5 general areas having negative Screening indicators that triggered the watershed in meeting the designation criteria. The DRBC considered recent changes to water use and public comment that related to the areas having negative screening indicators. These efforts suggest that more detailed study at a Critical Area Resource Plan (CARP) level including additional data acquisition may provide better analyses of negative pour points. While detailed analyses were not performed for future demand scenarios, there was sufficient evidence of future population growth within the planning horizon that could pose a potential threat of impairment to the Brodhead Creek.

Summary of Public Comments

Two comments were received by water purveyors in opposition to designation of the Brodhead based generally on technical merits with the opinion that it is premature to designate the Brodhead Creek a Critical Water Planning Area. Meanwhile, there were 21 other commentators who provided supporting testimony to the proposed designation. Those supporting designation pointed to subjects such as trout habitat, growth of region, decreases in headwaters, as well as water quality/designated uses and changes development could bring.

General Responses to Comments

Technical issues from the commentators were examined and considered by DEP and the DRBC. The issue items, independently or collectively did not provide sufficient evidence that the Brodhead does not meet criteria when considering the potential impairment to the Brodhead due to population growth and development.

Delaware Basin - Little Lehigh Creek

Description of Watershed and Water Uses

The Little Lehigh Creek is a rapidly developing watershed in Lehigh County whose headwaters extends into Berks County. Not under consideration is Jordan Creek, a tributary whose confluence with the Little Lehigh Creek is immediately upstream of the mouth of the Little Lehigh near the Lehigh River. With designation as HQ-CWF, Little Lehigh water use comes primarily from ground water sources, of which 80% of total water use is attributed to water supply followed by 12% industrial.

Issues and Concerns

The Little Lehigh Creek watershed is underlain by complex carbonate rock that has been reported to have groundwater and surface water divides that may not coincide. The USGS previously conducted a study on ground water flow within the basin while comprehensive source water protection studies are currently underway that included modeling of the subsurface water flow. From references obtained during the data verification efforts and from testimony provided throughout the process, issues within the watershed include water quality, dry streams, flashy flows and issues with storm water management. A 2007 study by the Coldwater Heritage Partnership concluded that 56% of the reaches along the main stem are in poor condition. Discussions with professionals who work in or are knowledgeable of the watershed agree that further information is needed to fully understand the water resources in the watershed.

Results from Screening and Data Verification

The screening and data verification work performed by the Delaware River Basin Commission (DRBC), identified 10 of 21 pour points having negative Screening indicators. A significant reason for the negative indicators is that much of the watershed is covered by a regional sewage system which carries waste water out of the watershed to the City of Allentown treatment plant and is not returned back to the Little Lehigh Creek. Projected changes in population with corresponding changes in land use over the next decade will be a factor in addressing demands and water management within the watershed. Due to the complex characteristics of the watershed, a complete representation of water availability would require more detailed study than what was performed under the screening and data verification.

Summary of Public Comments

The comments and testimony received is divided among the lines of water purveyors and others that included watershed/environmental groups. The Lehigh County Authority (LCA) and City of Allentown including the Lehigh Valley Planning Commission offered technical comments and reasons why current data is not adequate to conclude the watershed meets designation criteria. While opposed to designation, the LCA has indicated they do support further study to make a more conclusive decision on designation. Comments in support of designation were mostly based on degraded conditions of the stream.

General Responses to Comments

Each comment was carefully considered. Many of the comments pointing to the need for further study have merit, but could be viewed as further support for designation as that would lead to a CARP study.

Delaware Basin - Tributaries to Neshaminy Creek

- Little Neshaminy Creek (including Park Creek) 43.1 mi2
- Mill Creek 21.9 mi^2
- Pine Run 11.7 mi^2

Description of Watershed and Water Uses

The highly urbanized tributaries of the Neshaminy Creek and are located in the upper half of the Neshaminy Creek, north of Rt 232 in Bucks and Montgomery Counties. The tributaries have designated uses that include WWF, CWF and Trout Stocking. An estimated 78% of total water use is from for public water supply followed by 12 percent for mining and lower percentages for industrial, commercial and agricultural use. Within the upper Neshaminy Creek, a high degree of interconnection exists between water purveyors whose service areas extend into and out of the watershed resulting in some importation of water into the basin.

Issues and Concerns

As with many urbanized watersheds, the upper part of the Neshaminy suffers from a number of issues including alteration and impairment of the stream characteristics, increased storm water runoff, reduced base flow, erosion, flooding and poorer water quality. This area has been the focus of attention in various studies (including a number of Rivers Conservation Plans) to protect and improve the water resources. The Neshaminy Creek is within the DRBC Groundwater Protection Area that provides for regulation of water withdrawals and promotion of water conservation to address reductions in base flow from groundwater withdrawals. An objective of the 2007 Rivers Conservation

Plan for the Little Neshaminy Creek called for the protection of drinking water sources through wellhead protection programs, reducing demand and improving water quality.

Results from Screening and Data Verification

From screening and data verification by the DRBC on the entire Neshaminy Creek, recommendations were made for the Regional Committee to focus on only the aforementioned tributaries as they contained the extent of pour points having negative Screening indicators. The majority of the negative pour points appear to be related to exportation of water by discharges located outside the tributary drainage areas. This is a common occurrence in urbanized watersheds served by public water and sewer where stream segments are somewhat "deprived" until sewer flow or returns from withdrawals are discharged back into the watercourse.

Summary of Public Comments

No public comments were given either in writing or by testimony

General Responses to Comments

None required.

Upper/Middle Susquehanna - Spring Creek

Description of Watershed and Water Uses

Spring Creek, located in Centre County is about 145 mi^2 in surface water drainage area. The majority of water use in the Spring Creek watershed falls between two uses; 52% for public water supply, and 40% for mining use. Small percentages of water use are attributed to industrial and commercial sectors.

Issues and Concerns

The local awareness of Spring Creek Watershed resources inspired the creation of the Spring Creek Watershed Commission; a group of elected and appointed officials from each of the municipalities in the watershed to share issues of concern. From this group developed a Spring Creek Watershed Plan that identified a number of challenges that relate to the changes in land use and increased water use in the area. A long list of challenges included declining stream baseflow, the need to protect surface reservoirs, insufficient wellhead protection, insufficient water quantity and unacceptable water quality among other issues. A follow-up to the Spring Creek Watershed Plan involved a partnership between the Clearwater Conservancy and the USGS to develop a linked surface/groundwater model of the watershed as a basis for simulating flow in various land use scenarios.

The Susquehanna River Basin Commission (SRBC) identified the State College area as "potentially stressed" in their 2005 Groundwater Plan for the Susquehanna Basin. A Potentially Stressed Area (PSA) is where existing or projected withdrawals and uses are anticipated to exceed long-term sustainability of the groundwater resource or cause conflicts among users. In being designated as a PSA, Spring Creek needed to meet at least two criteria in a list that included diminished groundwater yields and levels, diminished stream flows, expanding dry stream reaches.

Results from Screening and Data Verification

The screening and data verification work performed by the Susquehanna River Basin Commission (SRBC), identified 9 of 38 pour points having negative Screening indicators. Those points are located in the middle portion of the watershed on Spring Creek within the Borough of State College and in the

Slab Cabin Run watershed to the south of State College. Public water supply withdrawals significantly influenced the points having negative Screening indicators.

Summary of Public Comments

There were 4 comments/testimonies on Spring Creek. Two water purveyors, Penn State University Engineering Services, and State College Borough Water Authority (SCBWA), offered technical comments and historic information to generally cast doubt on the validity of the watershed being a CWPA. The SCBWA supports further investigations prior to designation. Comments from a representative of Meiser & Earl, an engineering firm in State College offered technical comments, a few of which pertained to the neighboring Nittany Creek that is no longer under consideration. In support of designation, Todd Giddings testified that he disagreed with concerns of those opposing designation and highlighted the water quality issues that would justify designation.

General Responses to Comments

All comments were carefully considered, but it was concluded that they did not provide sufficient evidence that Spring Creek does not meet criteria.

Upper/Middle Susquehanna - Toby Creek

Description of Watershed and Water Uses

Toby Creek is an approximately 35 mi^2 developing watershed located immediately north of Wilkes-Barre within Luzerne County. Toby Creek has a WWF designation with a segment as Trout Stocking. Public water supply makes up about 84% of water use in the basin followed by an estimated 12% commercial use with smaller percentages towards mining, self-supplied residential and industrial use.

Issues and Concerns

During the screening and data verification process, the DEP Northeast Regional Office indicated a number of problems within the watershed including groundwater depletion problem in the headwaters, individual homeowner wells having to drill deeper, sewage discharge exporting water out of the watershed into the Susquehanna River, flooding and storm water management problems. A project is proposed to restore about 2,200 feet of Toby Creek at the lower end of the watershed that was severely affected by a flood in 2006.

Results from Screening and Data Verification

The screening and data verification work performed by the SRBC, identified 7 of 9 pour points having negative Screening indicators located along the main stem of Toby Creek from the mid point of the watershed down to its mouth. The SRBC indicated that the pour points were substantially influenced by water use from registered public water supplies.

Summary of Public Comments

No public comments were given either in writing or by testimony

General Responses to Comments

None required.

Upper/Middle Susquehanna - Sugar Creek

Description of Watershed and Water Uses

Sugar Creek is a 189 mi^2 rural, agricultural based watershed located in Bradford County to the west of Towanda. The upper portion of the basin is designated as Trout Stocking with the lower as WWF with most of the watershed meeting designated uses. Twenty seven (27%) of registered water use is for public water supply (primarily Troy Borough) and 4% agriculture with 35% of additional water use estimated for agriculture, 15% for industrial, 14% for commercial and 5% for self-supplied residential use. It is estimated that about 490 livestock operations exist in the watershed.

Issues and Concerns

Discussions with the Upper/Middle Susquehanna Regional Committee, the USGS, SRBC and others indicated that low groundwater infiltration and low baseflow is a natural characteristic of the glaciated terrain in this region. The increasing presence of Marcellus gas exploration/development and associated water withdrawals has raised concern. At the time this briefing was prepared, this region was one of the most active areas for Marcellus water withdrawals. A July 2009 Towanda-Sugar Creek watershed Conservation Plan lists many common water resource challenges and strategies related to impacts from agriculture, forestry and mining (sand/gravel/gas).

Results from Screening and Data Verification

The screening and data verification work performed by the SRBC identified all 51 pour points in the watershed with negative screening indicators. The SRBC indicated that the pour points were substantially influenced by water use from registered public water supplies and from estimated agricultural withdrawals. Additional verification of agricultural withdrawals and, along with information from the Bradford County Conservation District confirmed the extent of livestock operations used in the analyses and gave confidence in the estimated withdrawals. Water withdrawals for Marcellus gas operation did not exist during 2003, the base year for which the screening and verification was analyzed.

Summary of Public Comments

The only public comment on Sugar Creek came from oral testimony by Mike Lovegreen, Director of the Bradford County Conservation District, who provided information on the watershed and noted concern over Marcellus shale water withdrawals.

General Responses to Comments

None required.

Potomac Basin - Marsh Creek/Rock Creek

Description of Watersheds and Water Uses

Marsh Creek (77 mi^2) and Rock Creek (63 mi^2) are rapidly developing watersheds that combine into the Monocacy River below Gettysburg along the PA/MD border. Streams flow from farmlands, residential areas into urban areas as they pass through and near Gettysburg Borough. Both Creeks were examined together under the screening and data verification because of hydrologic connectivity;

public water supply boundaries extend between the watersheds and discharges are exported between Marsh and Rock Creeks. Marsh Creek is designated as a WWF with segments as CWF. Rock Creek is designated entirely as WWF. In Marsh Creek, nearly 59 % of withdrawals are attributed to water supply use followed by 33.8 % for agriculture from registrations and estimations.

Issues and Concerns

Both creeks have tributaries and segments that are not attaining designated use, impacting aquatic life from agriculture nutrients, siltation, urban runoff, storm sewers. With rising interest in protecting the county's water resources, the Adams County Commissioners in 2008 established a Water Resource Monitoring and Protection Program and a Water Resources Advisory Committee to advise the commission. Discussions with professionals who live and work in the watersheds and those knowledgeable about the subject have shared concern over a number of issues including water sustainability under development pressure, water quality and the proposed importation of water into the area from the Susquehanna River Basin to meet increasing population demands. Also of interest is how much water is available for use. With a reliance on ground water for water supply, other concerns have included the lack of well construction standards, and geologic constraints on use of ground water.

Results from Screening and Data Verification

The screening and data verification work performed by the Interstate Commission on the Potomac River Basin (ICPRB) identified 14 out of 20 pour points on Marsh Creek and 7 out of 16 points on the Rock Creek having negative screening indicators. Pour points having positive screening indicators exist in Marsh Creek in the headwater areas. Further downstream, negative Screening indicators appear through the remainder of the watershed, first from agricultural usage followed by all other uses.

In Rock Creek, the negative pour points appear in two places. In the upper part of the watershed negativity is attributed to agricultural withdrawals, but positive at the point of wastewater discharges further downstream. A second area of negative pour points is located on tributaries lower in the watershed due to water supply and agriculture withdrawals that is mitigated like the upper portion of the watershed through wastewater discharges.

Summary of Public Comments

Two written comments were received for Marsh/Rock Creeks; one from GeoServices Ltd that offered technical questions and from a private citizen who opposed designation because he thought there was no evidence of harm to aquifers or streams.

General Responses to Comments

All comments were carefully considered. The comments did not provide sufficient evidence that the watersheds do not meet designation criteria.

Potomac Basin - Alloway Creek

Description of Watershed and Water Uses

Alloway Creek is a 16 mi^2 predominately agricultural watershed sharing its western boundary with Rock Creek and with the Borough of Littlestown along its eastern boundary. The entire basin is designated as WWF. Fifty eight percent (58%) of water withdrawals come from registered water supply use with 12.4 % from registered commercial use. A 25.7% portion of water withdrawals was estimated for agricultural irrigation and livestock uses.

Issues and Concerns

The prime concern obtained during the screening and verification process appears to be the affect of land development.

Results from Screening and Data Verification

The screening and data verification work by the ICPRB showed three pour points having negative Screening indicators, but each of the three had three indicator percentages no less than -13.7%. The primary water use affecting the pour points was from the Littlestown Municipal Authority well withdrawals. Water is imported into the watershed through sewer discharges originating in neighboring Piney Creek.

Summary of Public Comments

Two oral testimonies were given. One came from a resident of Alloway Creek that spoke in support of designation and who recognized the significant population growth in area and golf course usage in dry weather. Another testimony was from a representative of Littlestown Borough who acknowledged the accuracy of the verification report and offered 100% support from the Borough if information is needed.

General Responses to Comments

None required.