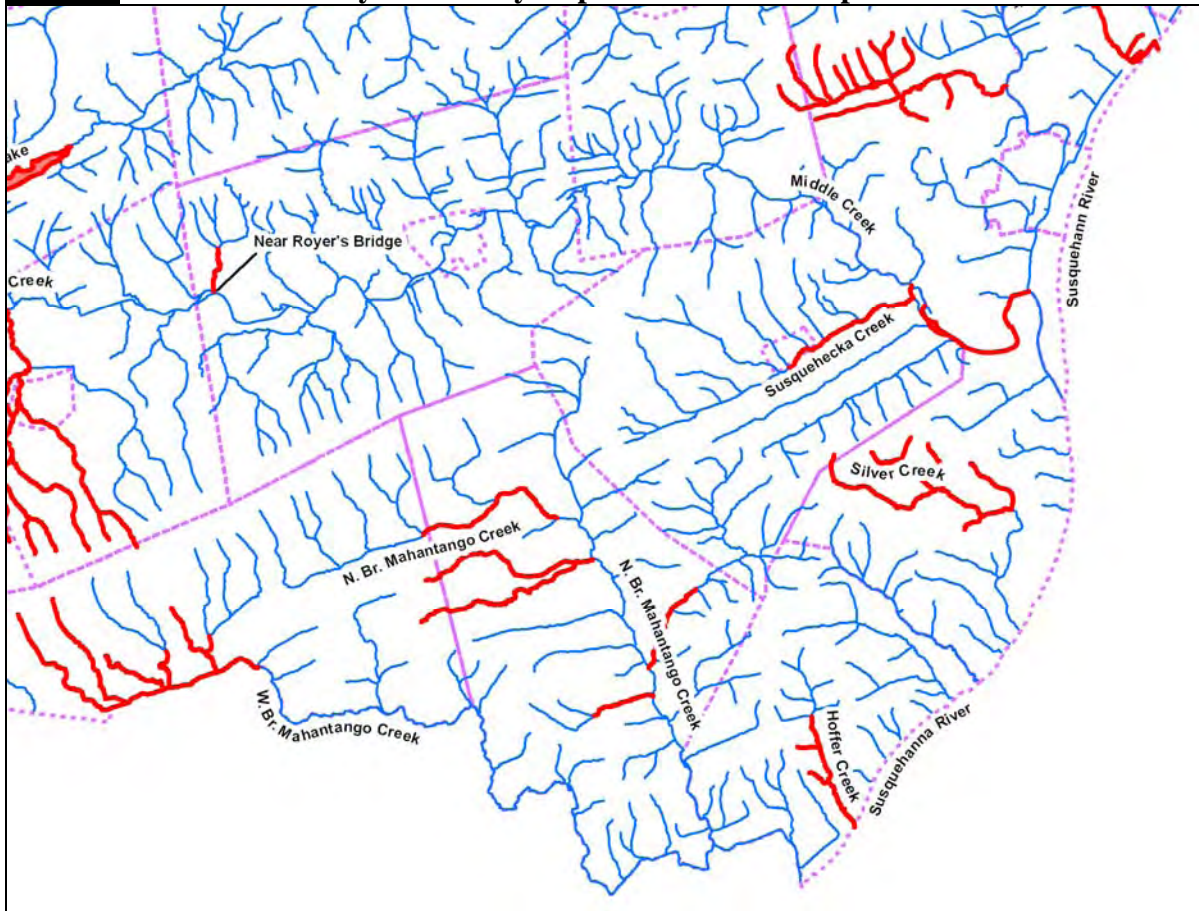


**Map 10: Southeastern Snyder County Impaired Streams Map**



Tables 8A and 8B show charts regarding stream impairment data that relates to Snyder County water bodies from various sources. (PA-DEP, October 2009a, PA-DEP, January 2010 website, PA-DEP 2008 and Aqua-Link, 2003)

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**Table 8A: Impaired Stream Segments in Snyder County (See Legend at Table End)**

Waterbody Name	COMID	Municipality	Miles	*	Problem 1	Problem 2	Problem 3
Aline Creek	54970855	Perry	0.015	AL	Ag/S	RV/S	
Aline Creek	54971073	Perry	1.075	AL	Ag/S	RV/S	
Hoffer Creek	54971005	Chapman	0.581	AL	GRAg/S		
Hoffer Creek	54971231	Chapman	0.578	AL	GRAg/S		
Hoffer Creek	54971421	Chapman	0.581	AL	GRAg/S		
Hoffer Creek	54971453	Chapman	0.132	AL	GRAg/S		
Hoffer Creek	54971475	Chapman	0.116	AL	GRAg/S		
Hoffer Creek	54971503	Chapman	0.085	AL	GRAg/S		
Kern Run	54969143	Beaver	1.163	AL	MPS/OE/LDO		
Kern Run	54969221	Beaver	0.238	AL	MPS/OE/LDO		
Kern Run	54969479	Beaver & Beavertown	0.424	AL	MPS/OE/LDO		
Kern Run	54969647	Beavertown	0.328	AL	AD/pH		
Kern Run	54969973	Beaver & Beavertown	0.798	AL	AD/pH		
Kern Run	54970155	Beaver	0.492	AL	AD/pH		
Kern Run	54970183	Beaver	0.160	AL	AD/pH		
Kern Run	54970227	Spring	0.090	AL	AD/pH		
Kern Run	54970337	Spring	0.411	AL	AD/pH		
Kern Run	54970355	Spring	0.072	AL	AD/pH		
Kern Run	54970375	Spring	0.127	AL	AD/pH		
Kern Run	54970987	Spring	1.492	AL	AD/pH		
Luphers Run	54970203	Beaver & Beavertown	2.518	AL	AD/pH		
Luphers Run	54970393	Beaver	0.477	AL	AD/pH		
Middle Creek	54966011	Penn & Union	0.035	FC	SU/M		
Middle Creek	54966075	Penn & Union	0.183	FC	SU/M		
Middle Creek	54966115	Penn & Union	0.098	FC	SU/M		
Middle Creek	54966183	Penn & Union	0.088	FC	SU/M		
Middle Creek	54966253	Penn & Union	0.066	FC	SU/M		
Middle Creek	54966259	Penn & Union	0.005	FC	SU/M		
Middle Creek	54966493	Penn & Union	0.222	FC	SU/M		
Middle Creek	54966549	Penn & Union	0.093	FC	SU/M		
Middle Creek	54966573	Penn & Union	0.073	FC	SU/M		
Middle Creek	54966591	Penn & Washington	0.130	FC	SU/M		
Middle Creek	54966681	Penn & Washington	0.119	FC	SU/M		
Middle Creek	54966701	Penn & Washington	0.046	FC	SU/M		
Middle Creek	54966755	Penn & Washington	0.101	FC	SU/M		
Middle Creek	54966849	Penn & Washington	0.328	FC	SU/M		
Middle Creek	54966893	Penn & Washington	0.175	FC	SU/M		
Middle Creek	54966939	Penn & Washington	0.169	FC	SU/M		
Middle Creek	54966975	Penn & Union	1.180	FC	SU/M		
Mitchell Run	54970599	Spring	1.514	AL	AD/pH		
Mitchell Run	54970769	Spring	0.320	AL	AD/pH		
Mitchell Run	54971131	Spring	0.915	AL	AD/pH		
North Branch Mahantango Creek	54969651	Perry	1.263	AL	Ag/OE/LDO		
North Branch Mahantango Creek	54969975	Perry & West Perry	1.464	AL	Ag/S		

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**Table 8A: Impaired Stream Segments in Snyder County (See Legend at Table End) --  
continued**

Waterbody Name	COMID	Municipality	Miles	⌘	Problem 1	Problem 2	Problem 3
Penns Creek	54962119	Jackson	0.660	FC	SU/M		
Penns Creek	54962139	Jackson	0.089	FC	SU/M		
Penns Creek	54962163	Jackson	0.078	FC	SU/M		
Penns Creek	54962305	Jackson	0.017	FC	SU/M		
Penns Creek	54962311	Jackson	0.507	FC	SU/M		
Penns Creek	54962325	Jackson	0.195	FC	SU/M		
Penns Creek	54962357	Jackson	0.099	FC	SU/M		
Penns Creek	54962391	Jackson	0.083	FC	SU/M		
Penns Creek	54962401	Jackson	0.018	FC	SU/M		
Penns Creek	54962439	Jackson	0.121	FC	SU/M		
Penns Creek	54962441	Jackson	0.016	FC	SU/M		
Penns Creek	54962443	Jackson	0.012	FC	SU/M		
Penns Creek	54962449	Jackson	0.013	FC	SU/M		
Penns Creek	54962473	Jackson	0.069	FC	SU/M		
Penns Creek	54962565	Jackson	0.186	FC	SU/M		
Penns Creek	54962573	Jackson	0.016	FC	SU/M		
Penns Creek	54962603	Jackson	0.041	FC	SU/M		
Penns Creek	54962631	Jackson	0.081	FC	SU/M		
Penns Creek	54962699	Jackson	0.089	FC	SU/M		
Penns Creek	54962711	Center	0.151	FC	SU/M		
Penns Creek	54962719	Center	0.018	FC	SU/M		
Penns Creek	54962755	Center	0.093	FC	SU/M		
Penns Creek	54962769	Jackson	0.066	FC	SU/M		
Penns Creek	54962789	Center	0.056	FC	SU/M		
Penns Creek	54962877	Jackson	0.106	FC	SU/M		
Penns Creek	54962891	Center	0.166	FC	SU/M		
Penns Creek	54962943	Center	0.028	FC	SU/M		
Penns Creek	54962949	Center	0.021	FC	SU/M		
Penns Creek	54962951	Center	0.182	FC	SU/M		
Penns Creek	54962999	Center	0.110	FC	SU/M		
Penns Creek	54963009	Center	0.016	FC	SU/M		
Penns Creek	54963025	Center	0.020	FC	SU/M		
Penns Creek	54963091	Center	0.404	FC	SU/M		
Penns Creek	54963103	Center	0.021	FC	SU/M		
Penns Creek	54963109	Center	0.329	FC	SU/M		
Penns Creek	54963229	Center	0.472	FC	SU/M		
Penns Creek	54963247	Center	0.023	FC	SU/M		
Penns Creek	54963263	Center & Jackson	0.594	FC	SU/M		
Penns Creek	54963271	Center	0.020	FC	SU/M		
Penns Creek	54963275	Center	0.086	FC	SU/M		
Penns Creek	54963283	Center	0.045	FC	SU/M		

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**Table 8A: Impaired Stream Segments in Snyder County (See Legend at Table End) --  
continued**

Waterbody Name	COMID	Municipality	Miles	⌘	Problem 1	Problem 2	Problem 3
Rolling Green Run	54962985	Monroe	0.591	AL	GC/OHA		
Rolling Green Run	54963007	Monroe	0.035	AL	GC/OHA		
Rolling Green Run	54963023	Monroe	0.132	AL	GC/OHA		
Rolling Green Run	54963259	Monroe	0.545	AL	GC/OHA		
Rolling Green Run	133385404	Monroe	0.429	AL	GC/OHA		
Rolling Green Run	133385408	Monroe	0.098	AL	GC/OHA		
Selinsgrove Creek	54963775	Penn	0.013	AL	CRAg/S	SRS/S	
Selinsgrove Creek	54963807	Penn	0.109	AL	CRAg/S	SRS/S	
Selinsgrove Creek	54963855	Penn	0.710	AL	CRAg/S	SRS/S	
Selinsgrove Creek	54963885	Penn	0.134	AL	CRAg/S	SRS/S	
Selinsgrove Creek	54963987	Penn	0.468	AL	CRAg/S	SRS/S	
Selinsgrove Creek	54964191	Penn	0.795	AL	CRAg/S	SRS/S	
Selinsgrove Creek	54964203	Penn	0.054	AL	CRAg/S	SRS/S	
Silver Creek	54968667	Union	0.143	AL	GRAg/S		
Silver Creek	54968833	Union & Washington	0.995	AL	GRAg/S		
Silver Creek	54968877	Union	0.800	AL	GRAg/S		
Silver Creek	54968881	Union	0.565	AL	GRAg/S		
Silver Creek	54968947	Union	1.388	AL	GRAg/S		
Susquehecka Creek	54966885	Washington	1.007	AL	GRAg/S		
Susquehecka Creek	54967171	Washington	0.664	AL	GRAg/S		
Susquehecka Creek	54967269	Washington	0.294	AL	GRAg/S		
Susquehecka Creek	54967561	Freeburg & Washington	0.502	AL	GRAg/S		
Tributary to Beaver Creek	54969803	Spring	0.021	AL	SRS/S		
Tributary to Beaver Creek	54969839	Spring	0.148	AL	SRS/S		
Tributary to Beaver Creek	54969947	Spring	1.050	AL	SRS/S		
Tributary to Beaver Creek	54970035	Spring	0.469	AL	SRS/S		
Tributary to Beaver Creek	54970249	Spring	0.680	AL	SRS/S		
Tributary to Beaver Creek	54970289	Spring	0.827	AL	SRS/S		
Tributary to Beaver Creek	54970319	Spring	0.103	AL	SRS/S		
Tributary to Beaver Creek	54970437	Spring	0.893	AL	SRS/S		
Tributary to Hoffer Creek	54971027	Chapman	0.375	AL	GRAg/S		
Tributary to Hoffer Creek	54971261	Chapman	0.380	AL	GRAg/S		
Tributary to Hoffer Creek	54971411	Chapman	0.020	AL	GRAg/S		
Tributary to Hoffer Creek	54971419	Chapman	0.015	AL	GRAg/S		

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**Table 8A: Impaired Stream Segments in Snyder County (See Legend at Table End) --  
continued**

Waterbody Name	COMID	Municipality	Miles	⌘	Problem 1	Problem 2	Problem 3
Tributary to Kern Run	54969259	Beaver	0.110	AL	AD/pH		
Tributary to Kern Run	54969649	Beaver	0.781	AL	AD/pH		
Tributary to Kern Run	54970265	Spring	0.618	AL	AD/pH		
Tributary to Kern Run	54970345	Beaver	0.810	AL	AD/pH		
Tributary to Kern Run	54970429	Spring	0.508	AL	AD/pH		
Tributary to Kern Run	54970513	Beaver	2.313	AL	AD/pH		
Tributary to Kern Run	54970555	Beaver & Spring	0.935	AL	AD/pH		
Tributary to Kern Run	54970567	Beaver	0.756	AL	AD/pH		
Tributary to Kern Run	54970623	Beaver	0.626	AL	AD/pH		
Tributary to Kern Run	54970737	Spring	0.843	AL	AD/pH		
Tributary to Kern Run	54970857	Spring	0.987	AL	AD/pH		
Tributary to Kern Run	54970911	Spring	1.347	AL	AD/pH		
Tributary to Luphers Run	54970413	Beaver & West Perry	0.905	AL	AD/pH		
Tributary to Middle Creek	54966195	Washington & Penn	0.012	AL	GRAg/S		
Tributary to Middle Creek	54966321	Washington	0.115	AL	GRAg/S		
Tributary to Middle Creek	54966391	Washington	0.062	AL	GRAg/S		
Tributary to Middle Creek	54966405	Washington	0.025	AL	GRAg/S		
Tributary to Middle Creek	54966841	Penn & Washington	0.428	FC	SU/M		
Tributary to Middle Creek	54967879	Franklin	0.803	AL	GRAg/S		
Tributary to Middle Creek	54967889	Franklin	0.014	AL	GRAg/S		
Tributary to Mitchell Run	54970605	Spring	0.455	AL	AD/pH		
Tributary to Mitchell Run	54970613	Spring	0.199	AL	AD/pH		
Tributary to Mitchell Run	54970617	Spring	0.188	AL	AD/pH		
Tributary to Mitchell Run	54970973	Spring	0.838	AL	AD/pH		
Tributary to Mitchell Run	54971009	Spring	1.282	AL	AD/pH		
Tributary to Mitchell Run	54971133	Spring	1.278	AL	AD/pH		
Tributary to Mitchell Run	54971267	Spring	1.246	AL	AD/pH		
Tributary to Mitchell Run	54971303	Spring	1.601	AL	AD/pH		
Tributary to N Branch Mahantango Creek	54969969	Perry	0.308	AL	Ag/S		
Tributary to N Branch Mahantango Creek	54970073	Perry	0.221	AL	Ag/N	Ag/S	Ag/OE/LDO
Tributary to N Branch Mahantango Creek	54970081	Perry	0.025	AL	Ag/N	Ag/S	Ag/OE/LDO
Tributary to N Branch Mahantango Creek	54970171	Perry	0.353	AL	Ag/N	Ag/S	Ag/OE/LDO

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**Table 8A: Impaired Stream Segments in Snyder County (See Legend at Table End) --  
continued**

Waterbody Name	COMID	Municipality	Miles	⌘	Problem 1	Problem 2	Problem 3
Tributary to N Branch Mahantango Creek	54970217	Perry	2.613	AL	Ag/S		
Tributary to N Branch Mahantango Creek	54970225	West Perry	0.017	AL	Ag/S		
Tributary to N Branch Mahantango Creek	54970263	West Perry	0.226	AL	Ag/S		
Tributary to N Branch Mahantango Creek	54970553	Perry	0.881	AL	Ag/N	Ag/S	Ag/OE/LDO
Tributary to N Branch Mahantango Creek	54970591	Perry & West Perry	3.163	AL	Ag/S		
Tributary to N Branch Mahantango Creek	54970619	Perry	0.132	AL	Ag/N	Ag/S	Ag/OE/LDO
Tributary to N Branch Mahantango Creek	54970625	Perry	0.009	AL	Ag/N	Ag/S	Ag/OE/LDO
Tributary to Rolling Green Run	54963251	Monroe	0.020	AL	GC/OHA		
Tributary to Rolling Green Run	133385412	Monroe	0.471	AL	GC/OHA		
Tributary to Rolling Green Run	54963245	Monroe	0.205	AL	GC/OHA		
Tributary to Selingsgrove Creek	54963733	Penn	0.497	AL	CRAg/S	SRS/S	
Tributary to Selingsgrove Creek	54963735	Penn	0.389	AL	CRAg/S	SRS/S	
Tributary to Selingsgrove Creek	54963827	Penn	0.011	AL	CRAg/S	SRS/S	
Tributary to Selingsgrove Creek	54963839	Penn	0.027	AL	CRAg/S	SRS/S	
Tributary to Selingsgrove Creek	54963847	Penn	0.015	AL	CRAg/S	SRS/S	
Tributary to Selingsgrove Creek	54963853	Penn	0.022	AL	CRAg/S	SRS/S	
Tributary to Selingsgrove Creek	54963999	Penn	0.832	AL	CRAg/S	SRS/S	
Tributary to Selingsgrove Creek	54964001	Penn	0.295	AL	CRAg/S	SRS/S	
Tributary to Selingsgrove Creek	54964053	Penn	0.078	AL	CRAg/S	SRS/S	
Tributary to Selingsgrove Creek	54964111	Penn	0.300	AL	CRAg/S	SRS/S	
Tributary to Selingsgrove Creek	54964113	Penn	0.668	AL	CRAg/S	SRS/S	
Tributary to Selingsgrove Creek	54964187	Penn	0.321	AL	CRAg/S	SRS/S	
Tributary to Selingsgrove Creek	54964189	Penn	0.616	AL	CRAg/S	SRS/S	
Tributary to Selingsgrove Creek	54964199	Penn	0.291	AL	CRAg/S	SRS/S	
Tributary to Selingsgrove Creek	54964209	Penn	0.533	AL	CRAg/S	SRS/S	
Tributary to Selingsgrove Creek	54964251	Penn	0.192	AL	CRAg/S	SRS/S	
Tributary to Selingsgrove Creek	54964253	Penn	0.488	AL	CRAg/S	SRS/S	
Tributary to Selingsgrove Creek	54964351	Penn	0.972	AL	CRAg/S	SRS/S	
Tributary to Selingsgrove Creek	54964353	Penn	0.338	AL	CRAg/S	SRS/S	
Tributary to Selingsgrove Creek	54964357	Penn	0.659	AL	CRAg/S	SRS/S	
Tributary to Selingsgrove Creek	54964385	Penn	0.099	AL	CRAg/S	SRS/S	

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**Table 8A: Impaired Stream Segments in Snyder County (See Legend at Table End) --  
continued**

<b>Waterbody Name</b>	<b>COMID</b>	<b>Municipality</b>	<b>Miles</b>	<b>⌘</b>	<b>Problem 1</b>	<b>Problem 2</b>	<b>Problem 3</b>
Tributary to Selinsgrove Creek	54964387	Penn & Middlecreek	1.253	AL	CRAg/S	SRS/S	
Tributary to Selinsgrove Creek	54964419	Penn	0.247	AL	CRAg/S	SRS/S	
Tributary to Selinsgrove Creek	54964423	Penn	0.026	AL	CRAg/S	SRS/S	
Tributary to Selinsgrove Creek	54964461	Penn & Middlecreek	0.702	AL	CRAg/S	SRS/S	
Tributary to Selinsgrove Creek	54964557	Penn	1.393	AL	CRAg/S	SRS/S	
Tributary to Silver Creek	54968323	Union	0.016	AL	GRAg/S		
Tributary to Silver Creek	54968351	Union	0.407	AL	GRAg/S		
Tributary to Silver Creek	54968471	Union	0.557	AL	GRAg/S		
Tributary to Silver Creek	54968659	Union	0.834	AL	GRAg/S		
Tributary to Silver Creek	54968669	Union	0.734	AL	GRAg/S		
Tributary to Silver Creek	54968739	Union	1.135	AL	GRAg/S		
Tributary to Silver Creek	54969015	Union	0.385	AL	GRAg/S		
Tributary to Susquehanna River	54961267	Monroe	0.068	AL	UR/SS/S	C/W/FV	RR/W/FV
Tributary to Susquehanna River	54961269	Monroe	0.012	AL	UR/SS/S	C/W/FV	RR/W/FV
Tributary to Susquehanna River	54961321	Monroe	0.682	AL	UR/SS/S	C/W/FV	RR/W/FV
Tributary to Susquehanna River	54961323	Monroe	0.360	AL	UR/SS/S	C/W/FV	RR/W/FV
Tributary to Susquehanna River	54961449	Monroe	0.813	AL	UR/SS/S	C/W/FV	RR/W/FV
Tributary to Susquehanna River	54961459	Monroe	0.808	AL	UR/SS/S	C/W/FV	RR/W/FV
Tributary to Susquehanna River	54961465	Monroe	0.712	AL	UR/SS/S	C/W/FV	RR/W/FV
Tributary to Susquehanna River	54961467	Monroe	0.674	AL	UR/SS/S	C/W/FV	RR/W/FV
Tributary to Susquehanna River	54961487	Monroe	0.410	AL	UR/SS/S	C/W/FV	RR/W/FV
Tributary to Susquehanna River	54961489	Shamokin Dam	0.122	AL	UR/SS/S	C/W/FV	RR/W/FV
Tributary to Susquehanna River	54961509	Monroe & Shamokin Dam	0.078	AL	UR/SS/S	C/W/FV	RR/W/FV
Tributary to Susquehanna River	54961589	Monroe & Shamokin Dam	0.461	AL	UR/SS/S	C/W/FV	RR/W/FV
Tributary to Susquehanna River	54961893	Shamokin Dam	1.011	AL	UR/SS/S	C/W/FV	RR/W/FV
Tributary to Susquehanna River	54961949	Shamokin Dam	0.464	AL	UR/SS/S	C/W/FV	RR/W/FV
Tributary to Susquehanna River	54961951	Monroe	0.030	AL	UR/SS/S	C/W/FV	RR/W/FV
Tributary to Susquehanna River	54962089	Monroe	0.664	AL	UR/SS/S	C/W/FV	RR/W/FV
Tributary to Susquehanna River	54962363	Monroe	0.786	AL	GRAg/N	GRAg/S	

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**Table 8A: Impaired Stream Segments in Snyder County (See Legend at Table End) --  
continued**

Waterbody Name	COMID	Municipality	Miles	⌘	Problem 1	Problem 2	Problem 3
Tributary to W Branch Mahantango Creek	54971147	West Perry	0.321	AL	Ag/S		
Tributary to W Branch Mahantango Creek	54971149	West Perry	1.029	AL	Ag/S		
Tributary to W Branch Mahantango Creek	54971273	West Perry	0.164	AL	Ag/S		
Tributary to W Branch Mahantango Creek	54971279	West Perry	0.014	AL	Ag/S		
Tributary to W Branch Mahantango Creek	54971293	West Perry	0.423	AL	Ag/S		
Tributary to W Branch Mahantango Creek	54971435	West Perry	0.598	AL	Ag/S		
Tributary to W Branch Mahantango Creek	54971449	West Perry	1.359	AL	Ag/S		
Tributary to W Branch Mahantango Creek	54971575	West Perry	2.300	AL	Ag/S		
Tributary to Wolf Run	66203279	West Beaver	0.695	AL	Ag/N	Ag/S	Ag/OE/LDO
Tuscarora Creek	54962333	Jackson	0.020	AL	GRAg/S		
Tuscarora Creek	54963281	Jackson	1.715	AL	GRAg/S		
Ulsh Gap Run	54970163	Spring & West Beaver	2.887	AL	GRAg/S		
West Branch Mahantango Creek	54971291	West Perry	0.794	AL	Ag/S		
West Branch Mahantango Creek	54971433	West Perry	0.829	AL	Ag/S		
West Branch Mahantango Creek	54971441	West Perry	0.025	AL	Ag/S		
West Branch Mahantango Creek	54971447	West Perry	0.051	AL	Ag/S		
West Branch Mahantango Creek	54971459	West Perry	0.067	AL	Ag/S		
West Branch Mahantango Creek	54971461	West Perry	0.013	AL	Ag/S		
West Branch Mahantango Creek	54971573	West Perry	0.623	AL	Ag/S		
West Branch Mahantango Creek	54971633	West Perry	2.747	AL	Ag/S		
Wolf Run	66203307	West Beaver	0.736	AL	Ag/N	Ag/S	Ag/OE/LDO
Wolf Run	66203309	West Beaver	0.020	AL	Ag/N	Ag/S	Ag/OE/LDO
<b>TOTAL</b>			<b>111.055</b>				

**Legend for Symbols Used in Tables 8A & 8B**

Symbol	Description	Symbol	Description
Ag/N	Ag/Nutrients	MPS/OE/LDO/N	Municipal Point Source/Organic Enrichment/Low Dissolved O2/Nutrients
Ag/OE/LDO	Ag/Organic Enrichment/Low Dissolved O2	RV/S	Removal of Vegetation/Siltation
Ag/S	Ag/Siltation	RR/W/FV	Road Runoff/Water/Flow Variability
AD, pH	Atmospheric Deposition, pH	SS,R/S	Small Residential, Runoff/Siltation
C/W/FV	Channelization/Water/Flow Variability	SU/M	Source Unknown/Mercury
CRAg/S	Crop Related Ag/Siltation	UR/SS/S	Urban Runoff/Storm Sewers/Siltation
GC/OHA	Golf Courses/Other Habitat Alterations	N	North
GRAg/N	Grazing Related Ag/Nutrients	W	West
GRAg/S	Grazing Related Ag/Siltation	*	Assessed Use
AL	Aquatic Life	FC	Food Consumption
COMID	DEP sampling segment identification	Miles	Length of stream segment



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**Table 8B: Impaired Lake in Snyder County (continued)**

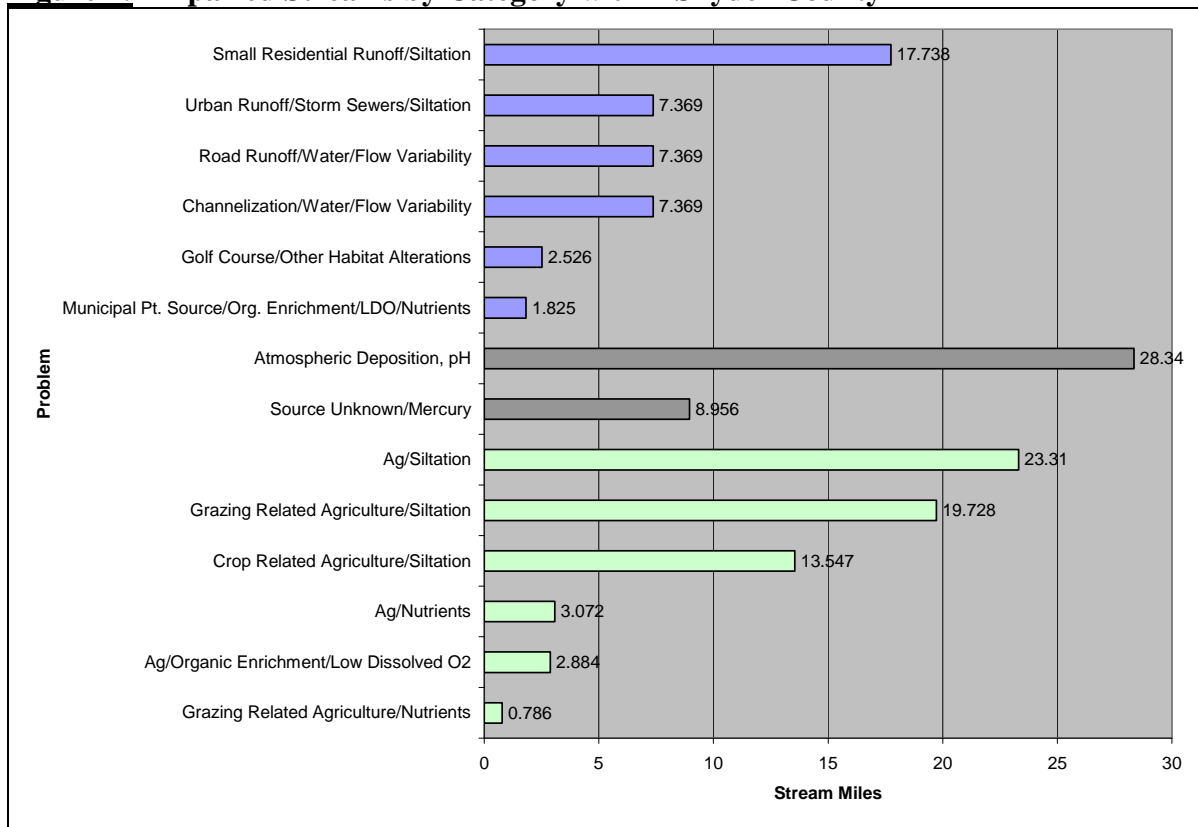
Lake Name	Municipality	Acres in Lake	*	Problem 1	Problem 2	Problem 3
Walker Lake	Adams	239	AL	Ag/OE/LDO	Ag/S	

Refer to the Legend on the prior page for descriptions.

Subsequent bar graphs and pie charts either break down information related to certain classes of information or group information into certain categories. For this Implementation Plan, these categories are “Agriculture”, “Non-agriculture” or “Other.” Some pie charts and later maps include a category named “Both.” This means that the stream segment has agricultural and non-agricultural identified impairment problems at the same time. (PA-DEP, October 2009 & January 2010 website)

*Note: Figures 1 through 3 do not include Walker Lake information.*

**Figure 1: Impaired Streams by Category within Snyder County**

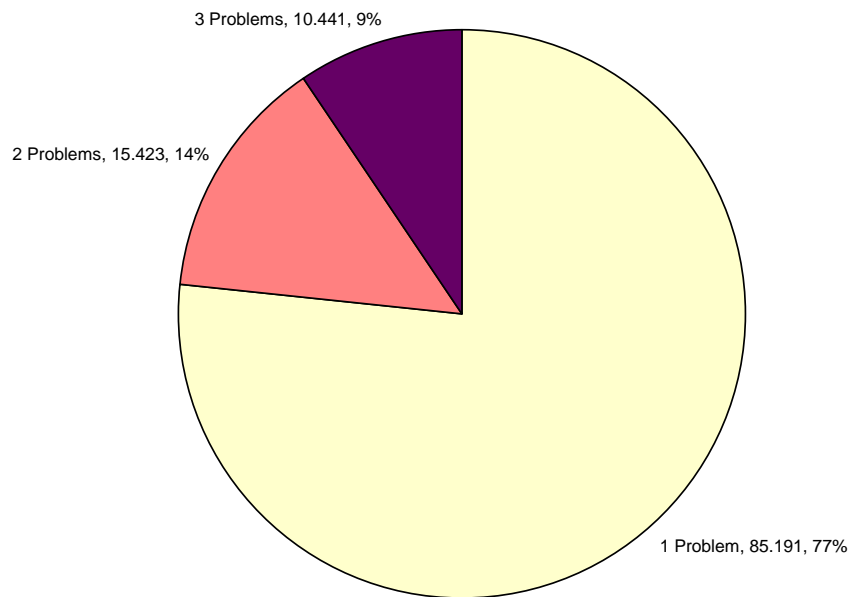


Note: The sum of the categories listed above is 144.819 miles, not 111.055 miles, due to some stream segments having more than one problem. Category Groups: Blue = Non-Agriculture, Gray = Other, Green = Agriculture

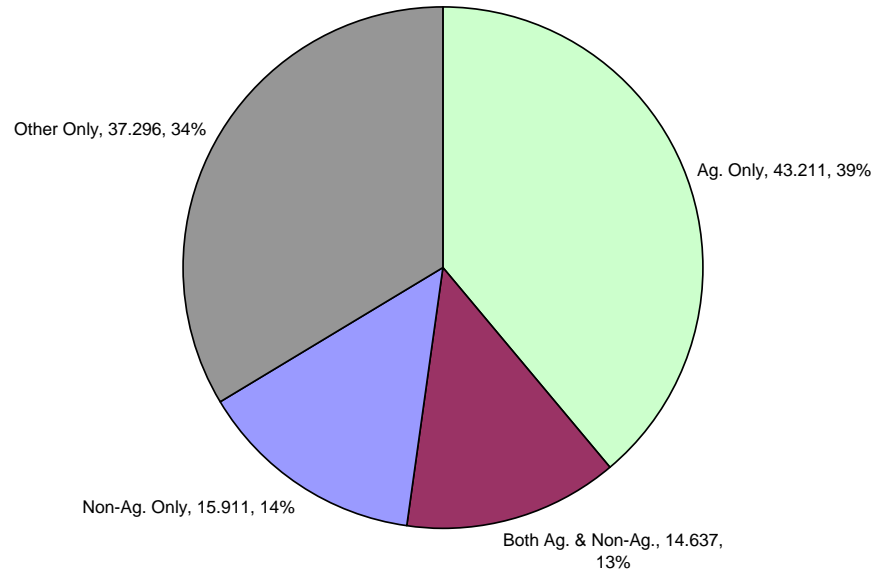
There are a total of 111.055 miles of identified problem streams within Snyder County. (Walker Lake is not included in the identified problems streams.) Some main points are listed below. Other information can be found in the following two pie charts (Figures 2 and 3). (PA-DEP, October 2009 & January 2010 website).

- Twenty-three percent of identified problem streams in Snyder County have two or three identified impairment categories. The remaining 77% has only one identified impairment category.
- Thirty-nine percent of identified impaired streams in Snyder County are caused by agricultural impairment only. Thirteen percent of problem streams are related to non-agricultural problems only such as urban issues or excavation sites. Another 14% of streams are caused by agricultural and non-agricultural problems at the same time. Thirty-four percent of problem streams are related to other activities such as atmospheric deposition and unknown sources of mercury.

**Figure 2: Impaired Stream Miles & Percentage that have 1, 2 or 3 Problems Identified (In miles & percent)**



**Figure 3: Breakdown of Stream Impairment Problems in Snyder County (In miles & percent)**



**Table 9: Impairment Problems Identified in Streams & Walker Lake and Their Respective Category (For use with other Tables, Figures & Charts in this Implementation Plan)**

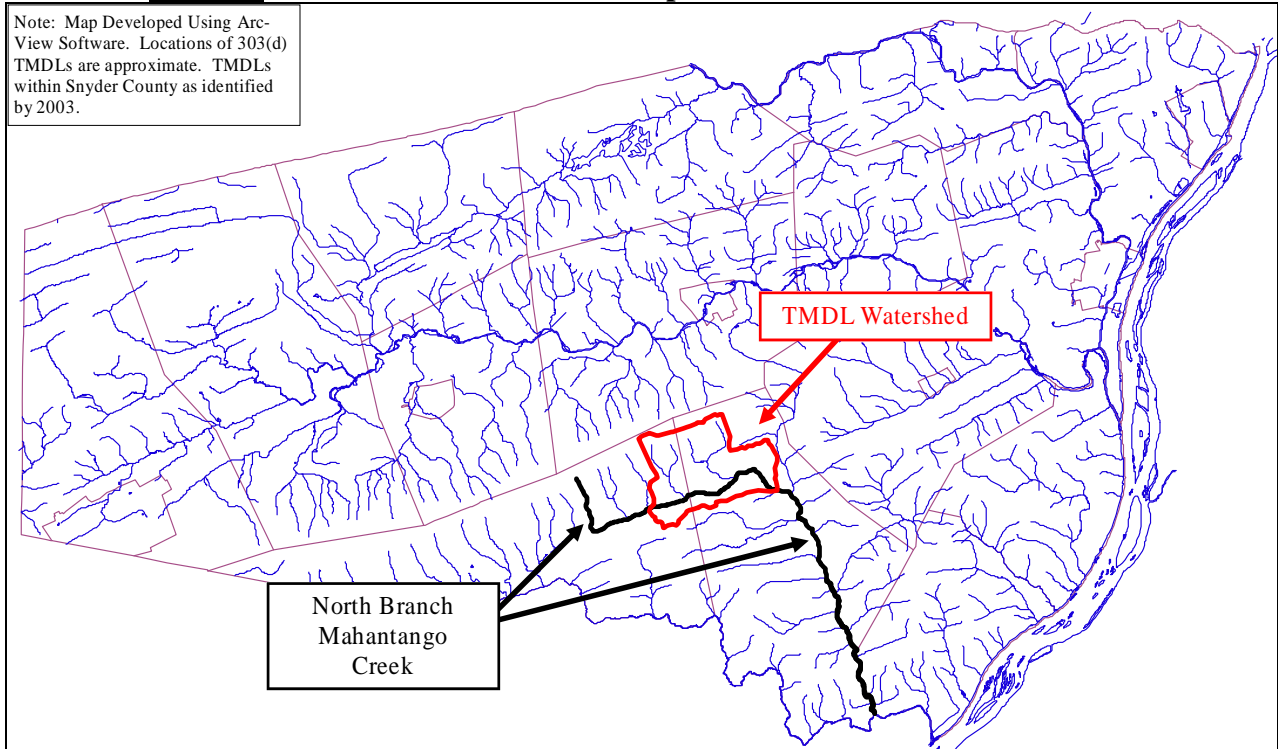
Category	Problems Identified
Ag.	Ag/Nutrients
Ag.	Ag/Organic Enrichment/Low Dissolved O2
Ag.	Ag/Siltation
Other	Atmospheric Deposition, pH
Non-Ag.	Channelization/Water/Flow Variability
Ag.	Crop Related Ag/Siltation
Non-Ag.	Golf Courses/Other Habitat Alterations
Ag.	Grazing Related Ag/Nutrients
Ag.	Grazing Related Ag/Siltation
Non-Ag.	Municipal Point Source/Organic Enrichment/Low Dissolved O2/Nutrients
Non-Ag.	Road Runoff/Water/Flow Variability
Non-Ag.	Small Residential, Runoff/Siltation
Other	Source Unknown/Mercury
Non-Ag.	Urban Runoff/Storm Sewers/Siltation

Total Maximum Daily Load (TMDL)

As of 2009, DEP has identified one impaired watershed due to non-abandoned mine drainage (Non-AMD) problems under the federal Clean Streams Laws; Section 303(d), mandated by EPA. (Other completed TMDLs may come later.) The identified area is a section of watershed within the North Branch of Mahantango Creek in southern Snyder

County with problems stemming from agricultural practices. Phosphorous and sediment were identified as problems resulting in stream siltation, low dissolved oxygen (DO) and organic enrichment. (PA-DEP-NCRO, 2001) Some of the stream segments have already been identified on prior maps and tables.

**Map 11: TMDL Stream Location Map**

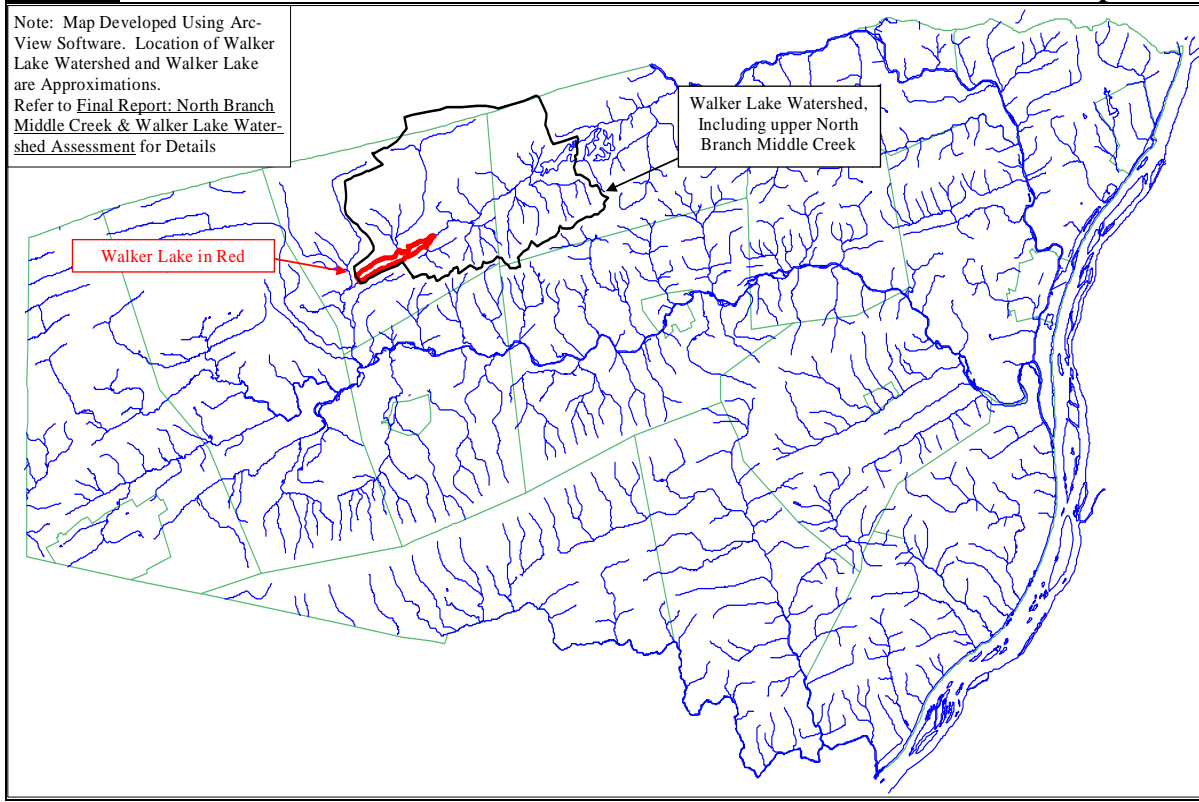


### Walker Lake Assessment

Aqua-Link, Inc. prepared an assessment for the upper section of the North Branch Middle Creek and Walker Lake watersheds under a Growing Greener grant sponsored by the Snyder County Conservation District. Reports were presented to DEP and the Snyder County Conservation District. (Refer to Map 12) The assessment final report notes that much of the area consists of forestland and agricultural land. (Aqua-Link, 2003)

While some in-lake restorations methods (such as lake aeration and lake deepening) were identified as recommended best management practices (BMPs) to improve Walker Lake watershed, many BMPs related to agriculture. They include: conservation planning (which would encourage minimum-tilling and no-tilling), nutrient management planning, streambank fencing and cattle crossings. (Aqua-Link, 2003)

**Map 12: Walker Lake and N. Br. Middle Creek & Walker Lake Watershed Map**



Technical Staff Observations

While numbers and statistics can give the reader of this plan an idea of what is happening in Snyder County, observations from a dedicated technical staff from the Snyder County Conservation District and Natural Resources Conservation Service (NRCS)—Field Office should not be ignored.

Agriculture – Snyder County farmers, participating in the PA Nutrient Management Act’s Program (Formally Act 6 of 1993, but now under Act 38 of 2005), have been keeping manure application and export records. (SCCD, January 2005 and January 2010) There are many farmers already managing no-till systems (19,740 acres, See Table 29). Others have shown interest in no-tilling in a variety of ways. Many farmers have participated or are participating in no-till incentive payment program with the conservation district’s Chesapeake Bay special project funds and NRCS’s programs. Eighty people attended a no-till field day event, funded by Chesapeake Bay special project and educational grant funds, held near Meiserville, PA. Several Amish and Mennonites attended the July 27, 2006, event. A similar event also attracted eighty people on September 30, 2009. (SCCD, February 2010)

In the past several years, many farmers have signed up for the South Central Chapter's Project Grass sponsored intensive/rotational grazing cost share programs. Many participated in the conservation district's cover crop incentive programs via Chesapeake Bay special project funds and NRCS. As mentioned in the County Description, many farmers have participated in state and federal cost share programs over the years. Others have inquired about agricultural BMP installation even without cost share funds. (SCCD, January 2005, December 2006 and February 2010 and NRCS, January 2005, December 2006 and February 2010)

These items below are concerns expressed by the conservation district and NRCS field office staff: (SCCD, January 2005, December 2005 and February 2010 and NRCS, January 2005, December 2006 and February 2010)

- Additional farmland needs to be no-tilled to prevent soil loss.
- Decrease unlimited cattle access to streams.
- Prevent potential barnyard and pasture nutrient runoff and leaching from reaching streams and groundwater.
- Address more environmentally friendly practices to handle and treat milkhouse wastewater.
- Methods of handling and storing the manure before field application are becoming a greater challenge due to large number of poultry operations.
- Cover cropping after silage corn is harvested would not only protect soil, but also act as a feeding alternative if the farmer desires it to follow this practice.
- Encourage the establishment of vegetative and/or riparian buffers between nearby streams and crop fields that receive manure and fertilizer.
- Develop a working relationship with individuals (example: Amish and Mennonite farmers) who normally do not work with government agencies. A significant proportion of farmers fit in this category.
- Investigate and promote alternative manure uses in the agricultural community such as poultry manure burners for heating poultry facilities or dairy manure digesters that produce electricity.
- Promote basic environmental compliance for all farms.

Non-Agriculture – While a large proportion of identified problem streams are linked to agriculture, other sources of impairment exist. Table 8A shows non-agricultural problems as well as agricultural problems. With the completion of the improved US Routes 11 and 15 between Selinsgrove and the junction of US Routes 22 and 322 north of Harrisburg, more people are willing to either:

- 1.) Live in Snyder County and travel to the Harrisburg area for employment, or
- 2.) Enjoy the rural environment of Snyder County and move into the area to live and work.

Snyder County Conservation District staff has noticed an increased workload in reviewing erosion and sedimentation plans and issuing NPDES (National Pollution Discharge Pollution Elimination System) permits to proposed excavation and construction

sites. NPDES does not only affect large developments, but also many small housing, commercial and agriculture earth disturbances that are one acre or greater. Additional resources are needed for the Conservation District to keep up with the increasing demand to assist DEP with the NPDES permitting and Chapter 102 regulations (PA Code, Title 25, Chapter 102). (Refer to map on the next page for location of US Routes 11 and 15 in Snyder County.) (SCCD, January 2005, December 2005, December 2006 and February 2010)

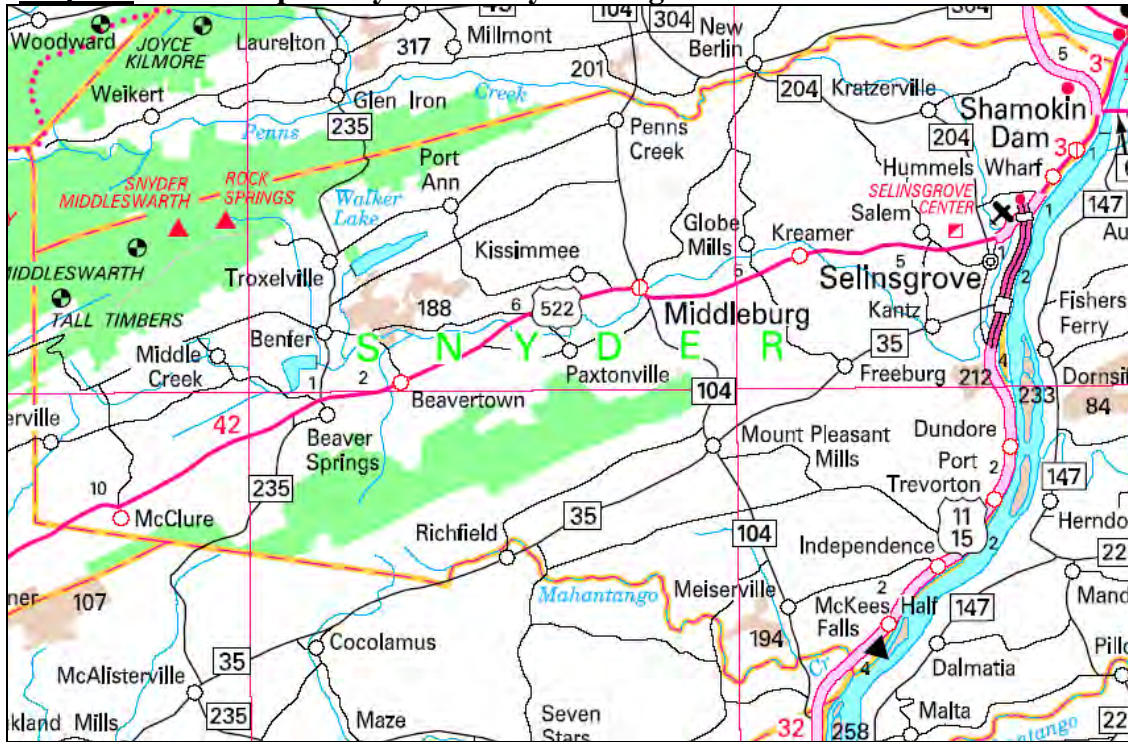
Damage to local streams also comes from urban and non-agricultural areas. In 2009, a section of the North Branch Mahantango Creek was stabilized with technical and financial assistance from the Conservation District, North Central Pennsylvania Conservancy, PA-DEP and the Pennsylvania Fish & Boat Commission. (SCCD, February 2010)

It was also discussed among Conservation District staff members that we should continue our educational program with school students and the general public at large. Since 2000, the conservation has given presentations to the following (SCCD, December 2006 and February 2010):

- Mid-West School District 5<sup>th</sup> graders during their Outdoor Education program at Camp Mt. Luther, Union County, PA
- Teach about the importance of soil to local Boy Scouts of America groups, home schooled middle and high school age students and Selinsgrove Area High School students preparing for the local and state Envirothon.
- Water quality issues to 5<sup>th</sup> graders in the Mid-West School District
- Erosion & sedimentation prevention to 6<sup>th</sup> graders in the Middleburg Middle School.
- In 2007 and 2009, held soils and water related educational discussions with West Snyder Middle School 7<sup>th</sup> and 8<sup>th</sup> graders.
- Constructed rain barrels to catch roof water and promote water quality protection and water quantity conservation.
- Presentations to other civic groups such as the local Rotary and the Daughters of America (DAR).
- Conducted educational workshops regarding proper maintenance of on-lot septic systems for homeowners.

The Conservation District, in conjunction with the Union County Conservation District, has recently created the Lower Penns Creek Watershed Association. This group is still in its infancy. However, it has been announced by the PA Department of Environmental Protection that the watershed group has received word that a grant to conduct a biological assessment the lower sections of the Penns Creek with help from Susquehanna University of Selinsgrove, PA and Mike Bilger of EcoAnalysts, Inc. It is also hoped that other watershed organizations can be created for other areas within the county, such as for the Middle Creek and Mahantango watersheds. (SCCD, December 2006 and February 2010)

**Map 13: Road Map of Snyder County showing US Routes 11 & 15**

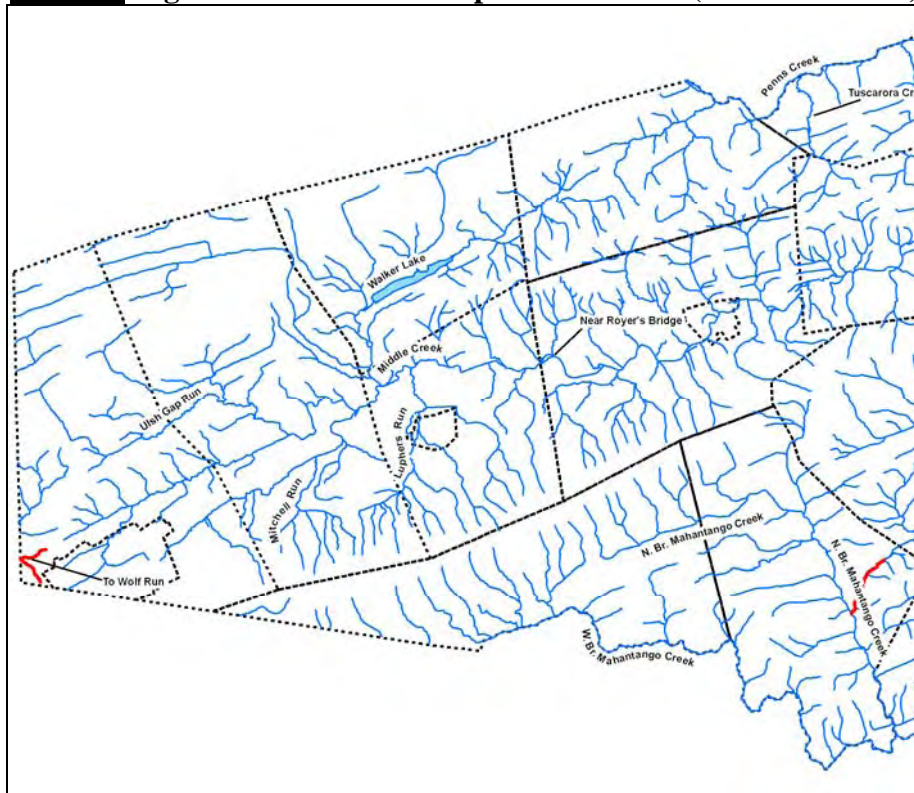


Note: Image from PA-PennDOT's website: "Official Travel & Transportation Map"

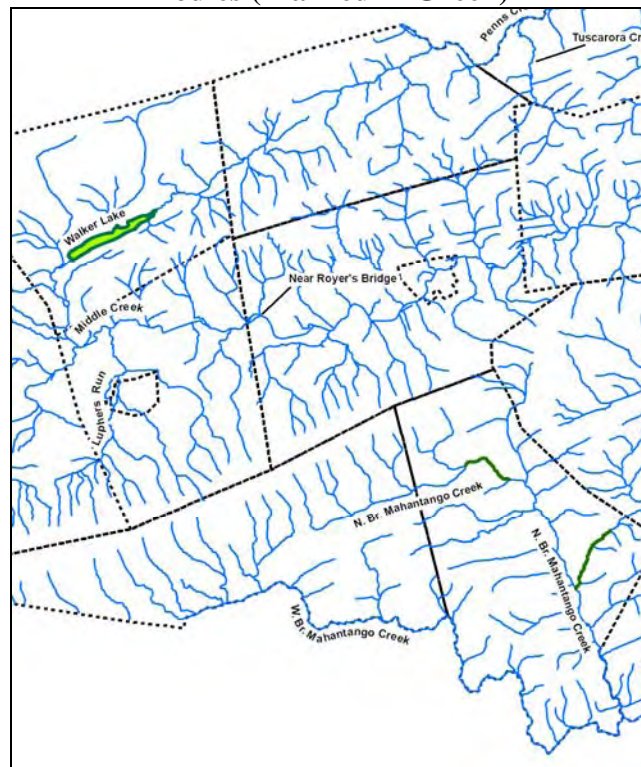
The following maps show a geographical view of where specific types of stream and lake problems, identified in Tables 8A and 8B, are located. (PA-DEP October 2009a and 2009b)



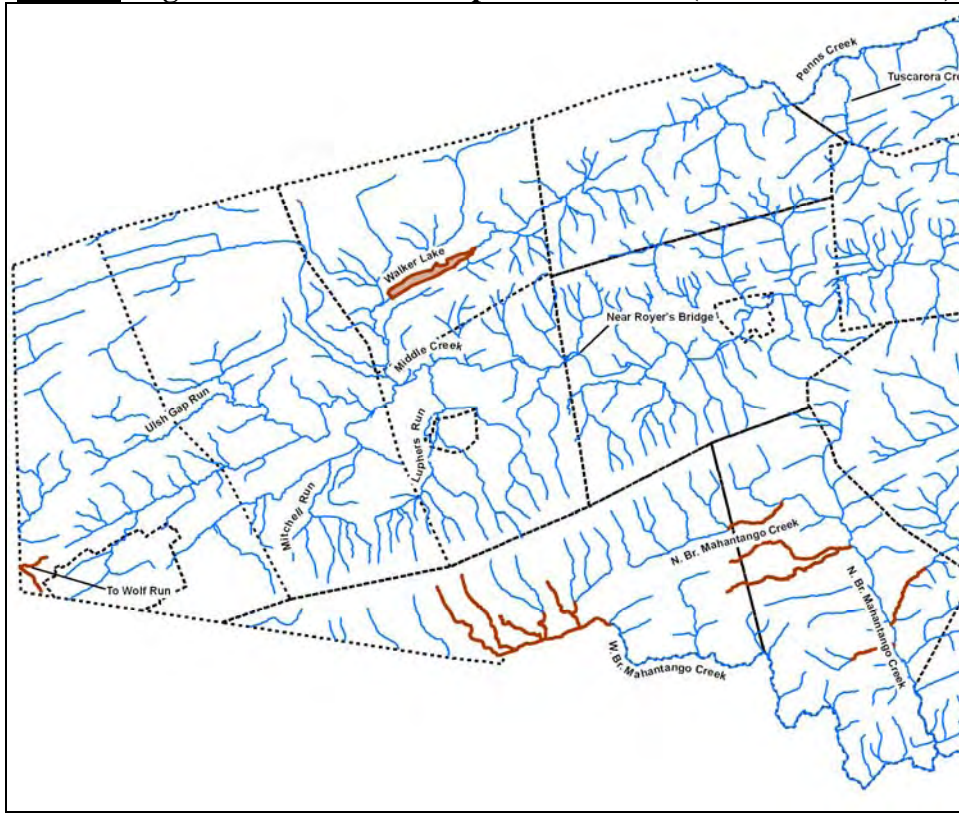
**Map 14: Agriculture/Nutrient Impaired Streams (Marked in Red)**



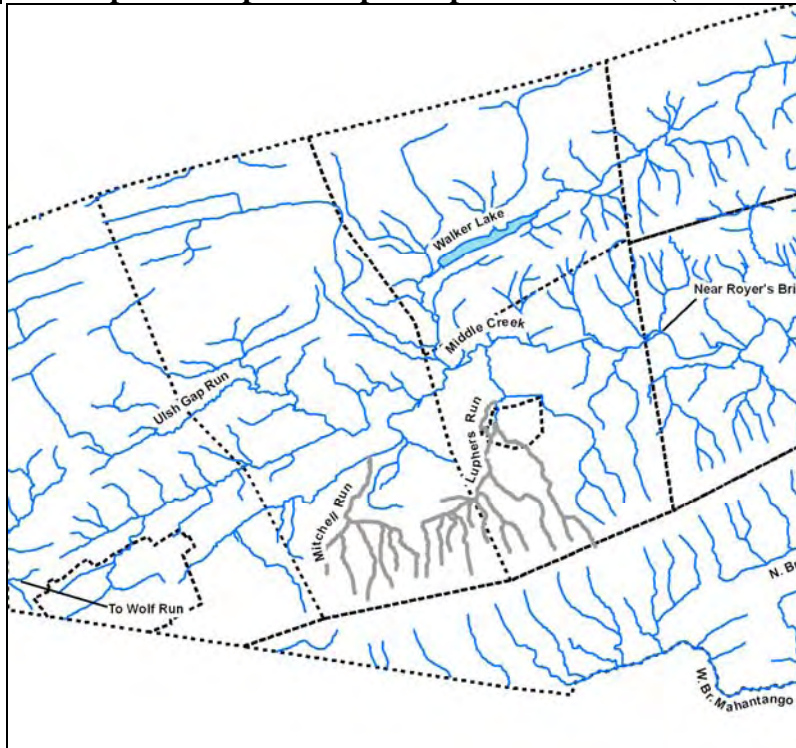
**Map 15: Agriculture/Organic Enrichment/Low Dissolved Oxygen Impaired Water Bodies (Marked in Green)**



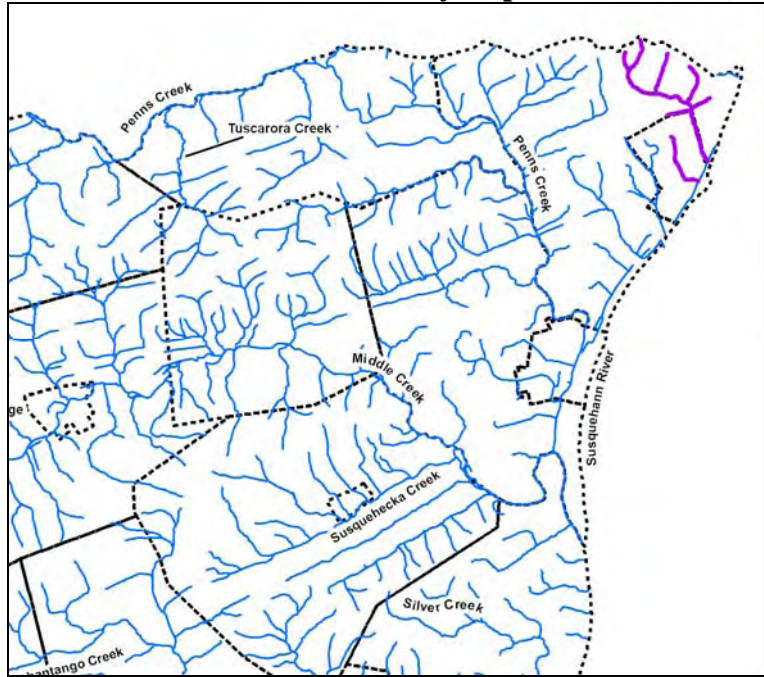
**Map 16: Agriculture/Siltation Impaired Streams (Marked in Brown)**



**Map 17: Atmospheric Deposition/pH Impaired Streams (Marked in Gray)**



**Map 18: Channelization/Water/Flow Variability Impaired Streams (Marked in Purple)**



**Map 19: Crop Related Agriculture/Siltation Impaired Streams (Marked in Red)**

