



**pennsylvania**

DEPARTMENT OF ENVIRONMENTAL PROTECTION



Office of Water Management

# **Perkiomen Creek:**

## **Stream Redesignation Evaluation Report**

**Environmental Quality Board Meeting**

**March 18, 2014**

# Stream Petition Contents

**Stream Petitions**: Primary avenue for public and stakeholder involvement

## **Petitioner Provides:**

- I. Petitioner Information
- II. Petition Information
  - A. Requested action (i.e. to amend a regulation)
  - B. Justification for requesting action
  - C. Who/What entities will be affected by this regulation change?
  - D. Is current litigation involved?
  - E. Stream redesignation information

# Stream Redesignation Petition

- **Submit petition to EQB via Office of Policy**
- **Completeness review**
- **Present to EQB for acceptance consideration**
- **Accept for study**
- **Biological survey; file search; public information request**

# ▶ Stream Redesignation Petition (cont.)

- **Draft report with recommendations**
- **Final report and recommendations to  
Petitioner, EQB, and Public**

**If change is necessary:**

- **Published as a Proposed Rulemaking**
- **Public comment period**
- **Published as a Final Rulemaking**

# Biological Survey

- **EV designation is biologically based** (*PA-DEP RBP Benthic sampling*)
- **Candidate stream similarities to reference streams:**
  - *Stream type* (i.e. freestone, limestone, etc.)
  - *Stream size* (stream order/drainage area)
  - *Similar water chemistry* (i.e. alkalinity)
  - *Similar aquatic habitat* (riffle/run; pool/glide)
- **Avoid using the lowest quartile streams** (*calculated biometric “IBI” scores;  $\sim < 80$* )

# Criteria for High Quality Waters

*The Petition Data and Information is reviewed using Chapter 93's High Quality and Exceptional Value Waters Qualifying criteria (25 Pa. Code § 93.4b):*

## Qualifying as High Quality Waters

- **Water Chemistry:** *Waters with long-term quality better than criteria for selected parameters: DO Temp pH Fe Al NH<sub>3</sub>-N diss. Cu, Ni, Cd, As, Pb, Zn*  
**or**
- **>= 83% Biological Reference /Candidate Stream Comparison Score**  
**or**
- **Class A Wild Trout Stream Waters**

# Criteria for Exceptional Value Waters

1. **First, qualify as HQ and** also meet one or more of the following:
  - *Waters that are in National Wildlife Refuge; State Natural Area ; Federal or State Wild River; or Federal Wilderness Areas*
  - *Exceptional Recreational Significance*
  - *Outstanding National, State, Regional, Local Resource Water*
  - **>= 92% Biological Reference /Candidate Stream Comparison Score**
  - *PFBC Wilderness Trout Stream*

**OR**

2. **Exceptional Ecological Significance**

# Chronology of Events

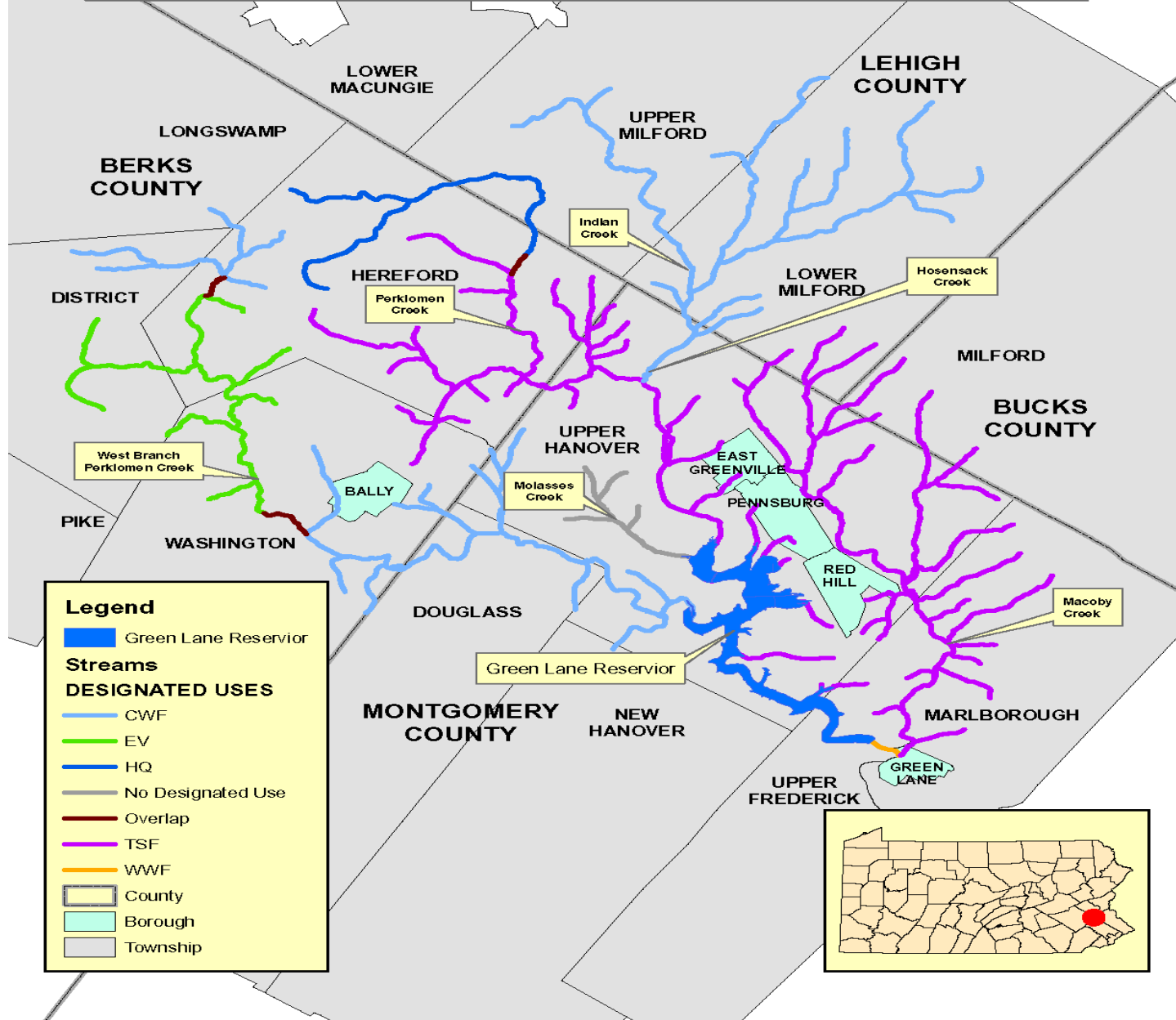
- Petition Submittal -> Completeness Review -> EQB Acceptance for Study -> Field Surveys, file search, other data and information gathering ->
- Data/Information review and HQ/EV Criteria applied
  - **No Perkiomen Stations exceeded the HQ 83% or EV 92% scores**
  - **The existing HQ Segment did not qualify for EV**
  - **No Perkiomen Stations met the Exceptional Ecological Significance criterion**
- **DEP report with maintain “current designation” recommendation**



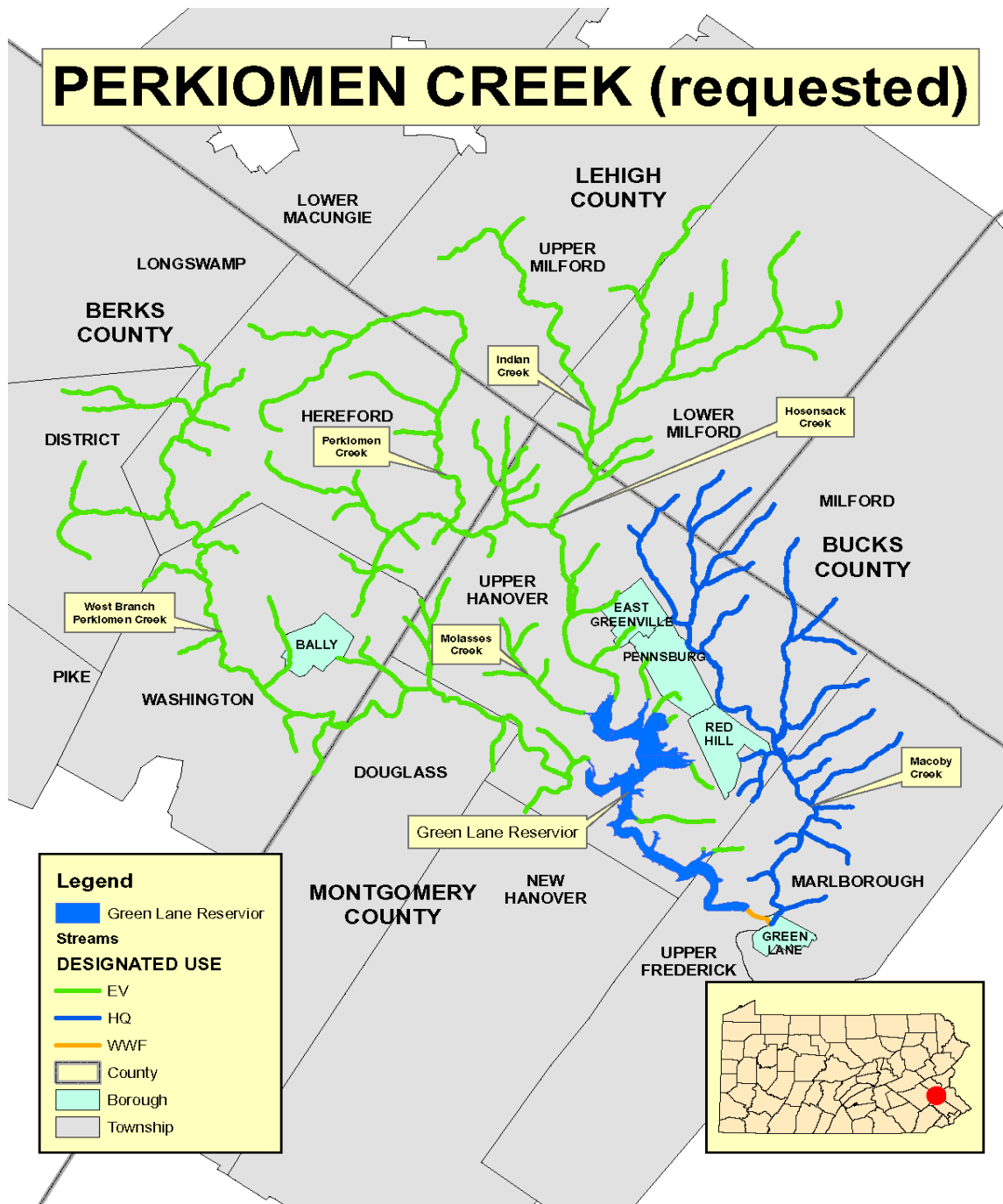
# Chronology of Events (cont.)

- DEP Report provided for Public Comment Period to end 10/18/13
- Petitioner requests 1 year extension for further study
  - Public Comment Period extended 30 days to 11/18/13
- Comment & Response document compiled
- Perkiomen Report scheduled for February 18, 2014 EQB Meeting
  - Postponed to the March 18, 2014 EQB Meeting
- Petitioners submitted additional questions regarding C&R document
- Petitioners again requested one year extension for further study and data submission

# PERKIOMEN CREEK (current)



# PERKIOMEN CREEK (requested)



**TABLE 1**  
**RBP METRIC COMPARISON**  
**Perkiomen Creek**  
**BERKS AND MONTGOMERY COUNTIES**  
**Rock Run Reference**

METRIC	CANDIDATE STATIONS							REF
	1PC	2PC	1UNT	2UNT	1UNTHC	1HC	1IC	Rock Run
<b>1. TAXA RICHNESS</b>	<b>19</b>	<b>20</b>	<b>22</b>	<b>29</b>	<b>18</b>	<b>17</b>	<b>22</b>	<b>27</b>
Cand/Ref (%)	70	74	81	107	67	63	81	xxx
Biol. Cond. Score	5	5	8	8	3	1	8	8
<b>2. MOD. EPT INDEX</b>	<b>10</b>	<b>11</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>6</b>	<b>12</b>	<b>13</b>
Cand/Ref (%)	77	85	54	62	69	46	92	xxx
Biol. Cond. Score	7	8	1	3	5	0	8	8
<b>3. MOD. HBI</b>	<b>3.65</b>	<b>3.24</b>	<b>4.19</b>	<b>4.16</b>	<b>2.99</b>	<b>3.7</b>	<b>3.64</b>	<b>2.53</b>
Cand-Ref	1.12	0.71	1.66	1.63	0.46	1.17	1.11	xxx
Biol. Cond. Score	3	7	0	0	8	2	3	8
<b>4. % DOMINANT TAXA</b>	<b>38</b>	<b>41</b>	<b>20</b>	<b>16</b>	<b>48</b>	<b>36</b>	<b>32</b>	<b>34.74</b>
Cand-Ref	3.26	6.26	-14.74	-18.74	13.26	1.26	-2.74	xxx
Biol. Cond. Score	8	8	8	8	6	8	8	8
<b>5. % MOD. MAYFLIES</b>	<b>31</b>	<b>44</b>	<b>21</b>	<b>7</b>	<b>50</b>	<b>37</b>	<b>20</b>	<b>48.36</b>
Ref-Cand	17.36	4.36	27.36	41.36	-1.64	11.36	28.36	xxx
Biol. Cond. Score	6	8	4	0	8	8	3	8
<b>TOTAL BIOLOGICAL CONDITION SCORE (BCS)</b>	<b>29</b>	<b>36</b>	<b>21</b>	<b>19</b>	<b>30</b>	<b>19</b>	<b>30</b>	<b>40</b>
<b>% COMPARABILITY TO REFERENCE</b>	<b>72.5</b>	<b>90.0</b>	<b>52.5</b>	<b>47.5</b>	<b>75.0</b>	<b>47.5</b>	<b>75.0</b>	
IBI	58.6	63.8	60.6	66.1	59.9	53.9	65.5	<b>79.3</b>

**TABLE 2**  
**RBP METRIC COMPARISON**  
**Perkiomen Creek**  
**BERKS AND MONTGOMERY COUNTIES**  
**Rock Run Reference**

METRIC	CANDIDATE STATIONS							REF
	2UNTHC	1MO	1WB	1UNTWB	1MCB	1MC	1SC	Rock Run
<b>1. TAXA RICHNESS</b>	<b>18</b>	<b>25</b>	<b>29</b>	<b>20</b>	<b>20</b>	<b>18</b>	<b>11</b>	<b>27</b>
Cand/Ref (%)	67	93	107	74	74	67	41	xxx
Biol. Cond. Score	3	8	8	5	5	3	0	8
<b>2. MOD. EPT INDEX</b>	<b>10</b>	<b>8</b>	<b>12</b>	<b>7</b>	<b>8</b>	<b>5</b>	<b>6</b>	<b>13</b>
Cand/Ref (%)	77	62	92	54	62	38	46	xxx
Biol. Cond. Score	7	3	8	1	3	0	0	8
<b>3. MOD. HBI</b>	<b>3.97</b>	<b>4.02</b>	<b>4.06</b>	<b>5.14</b>	<b>4</b>	<b>5.07</b>	<b>4.05</b>	<b>2.53</b>
Cand-Ref	1.44	1.49	1.53	2.61	1.47	2.54	1.52	xxx
Biol. Cond. Score	0	0	0	0	0	0	0	8
<b>4. % DOMINANT TAXA</b>	<b>30</b>	<b>32</b>	<b>16</b>	<b>41</b>	<b>32</b>	<b>43</b>	<b>40</b>	<b>34.74</b>
Cand-Ref	-4.74	-2.74	-18.74	6.26	-2.74	8.26	5.26	xxx
Biol. Cond. Score	8	8	8	8	8	8	8	8
<b>5. % MOD. MAYFLIES</b>	<b>4</b>	<b>4</b>	<b>22</b>	<b>3</b>	<b>7</b>	<b>7</b>	<b>0</b>	<b>48.36</b>
Ref-Cand	44.36	44.36	26.36	45.36	41.36	41.36	48.36	xxx
Biol. Cond. Score	0	0	4	0	0	0	0	8
<b>TOTAL BIOLOGICAL CONDITION SCORE (BCS)</b>	<b>18</b>	<b>19</b>	<b>28</b>	<b>14</b>	<b>16</b>	<b>11</b>	<b>8</b>	<b>40</b>
<b>% COMPARABILITY TO REFERENCE</b>	<b>45.0</b>	<b>47.5</b>	<b>70.0</b>	<b>35.0</b>	<b>40.0</b>	<b>27.5</b>	<b>20.0</b>	
IBI	61.5	66.1	76.8	47	60.9	44.3	49.1	<b>79.3</b>

**TABLE 3**  
**RBP METRIC COMPARISON**  
**Perkiomen Creek**  
**BERKS AND MONTGOMERY COUNTIES**

**Bieber Run Reference**

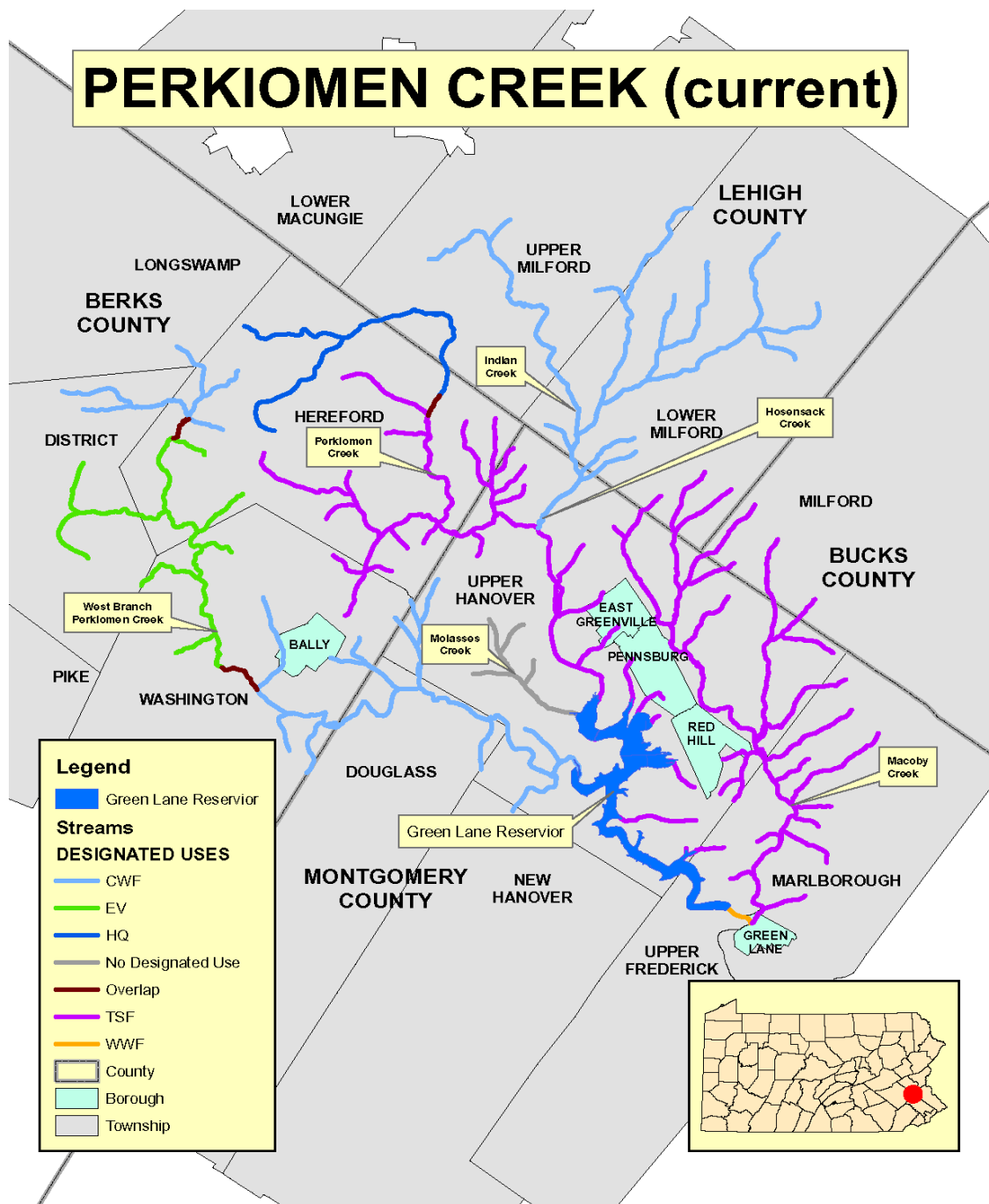
METRIC	CANDIDATE STATIONS							REF
	1PC	2PC	1UNT	2UNT	1UNTHC	1HC	1IC	Bieber
<b>1. TAXA RICHNESS</b>	<b>19</b>	<b>20</b>	<b>22</b>	<b>29</b>	<b>18</b>	<b>17</b>	<b>22</b>	<b>34</b>
Cand/Ref (%)	56	59	65	85	53	50	65	xxx
Biol. Cond. Score	0	0	2	8	0	0	2	8
<b>2. MOD. EPT INDEX</b>	<b>10</b>	<b>11</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>6</b>	<b>12</b>	<b>18</b>
Cand/Ref (%)	56	61	39	44	50	33	67	xxx
Biol. Cond. Score	2	3	0	0	1	0	4	8
<b>3. MOD. HBI</b>	<b>3.65</b>	<b>3.24</b>	<b>4.19</b>	<b>4.16</b>	<b>2.99</b>	<b>3.7</b>	<b>3.64</b>	<b>3.65</b>
Cand-Ref	0.00	-0.41	0.54	0.51	-0.66	0.05	-0.01	xxx
Biol. Cond. Score	8	8	8	8	8	8	8	8
<b>4. % DOMINANT TAXA</b>	<b>38</b>	<b>41</b>	<b>20</b>	<b>16</b>	<b>48</b>	<b>36</b>	<b>32</b>	<b>23.79</b>
Cand-Ref	14.21	17.21	-3.79	-7.79	24.21	12.21	8.21	xxx
Biol. Cond. Score	5	3	8	8	0	7	8	8
<b>5. % MOD. MAYFLIES</b>	<b>31</b>	<b>44</b>	<b>21</b>	<b>7</b>	<b>50</b>	<b>37</b>	<b>20</b>	<b>42.23</b>
Ref-Cand	11.23	-1.77	21.23	35.23	-7.77	5.23	22.23	xxx
Biol. Cond. Score	8	8	5	2	8	8	5	8
<b>TOTAL BIOLOGICAL CONDITION SCORE (BCS)</b>	<b>23</b>	<b>22</b>	<b>23</b>	<b>26</b>	<b>17</b>	<b>23</b>	<b>27</b>	<b>40</b>
<b>% COMPARABILITY TO REFERENCE</b>	<b>57.5</b>	<b>55.0</b>	<b>57.5</b>	<b>65.0</b>	<b>42.5</b>	<b>57.5</b>	<b>67.5</b>	
IBI	58.6	63.8	60.6	66.1	59.9	53.9	65.5	<b>81.4</b>

**TABLE 4**  
**RBP METRIC COMPARISON**  
**Perkiomen Creek**  
**BERKS AND MONTGOMERY COUNTIES**

**Bieber Run Reference**

METRIC	CANDIDATE STATIONS							REF
	2UNTHC	1MO	1WB	1UNTWB	1MCB	1MC	1SC	Bieber
<b>1. TAXA RICHNESS</b>	<b>18</b>	<b>25</b>	<b>29</b>	<b>20</b>	<b>20</b>	<b>18</b>	<b>11</b>	<b>34</b>
Cand/Ref (%)	53	74	85	59	59	53	32	xxx
Biol. Cond. Score	0	5	8	0	0	0	0	8
<b>2. MOD. EPT INDEX</b>	<b>10</b>	<b>8</b>	<b>12</b>	<b>7</b>	<b>8</b>	<b>5</b>	<b>6</b>	<b>18</b>
Cand/Ref (%)	56	44	67	39	44	28	33	xxx
Biol. Cond. Score	2	0	4	0	0	0	0	8
<b>3. MOD. HBI</b>	<b>3.97</b>	<b>4.02</b>	<b>4.06</b>	<b>5.14</b>	<b>4</b>	<b>5.07</b>	<b>4.05</b>	<b>3.65</b>
Cand-Ref	0.32	0.37	0.41	1.49	0.35	1.42	0.40	xxx
Biol. Cond. Score	8	8	8	0	8	0	8	8
<b>4. % DOMINANT TAXA</b>	<b>30</b>	<b>32</b>	<b>16</b>	<b>41</b>	<b>32</b>	<b>43</b>	<b>40</b>	<b>23.79</b>
Cand-Ref	6.21	8.21	-7.79	17.21	8.21	19.21	16.21	xxx
Biol. Cond. Score	8	8	8	3	8	2	4	8
<b>5. % MOD. MAYFLIES</b>	<b>4</b>	<b>4</b>	<b>22</b>	<b>3</b>	<b>7</b>	<b>7</b>	<b>0</b>	<b>42.23</b>
Ref-Cand	38.23	38.23	20.23	39.23	35.23	35.23	42.23	xxx
Biol. Cond. Score	1	1	5	1	2	2	0	8
<b>TOTAL BIOLOGICAL CONDITION SCORE</b>	<b>19</b>	<b>22</b>	<b>33</b>	<b>4</b>	<b>18</b>	<b>4</b>	<b>12</b>	<b>40</b>
<b>% COMPARABILITY TO REFERENCE</b>	<b>47.5</b>	<b>55.0</b>	<b>82.5</b>	<b>10.0</b>	<b>45.0</b>	<b>10.0</b>	<b>30.0</b>	
IBI	61.5	66.1	76.8	47	60.9	44.3	49.1	<b>81.4</b>

# PERKIOMEN CREEK (current)







**pennsylvania**

DEPARTMENT OF ENVIRONMENTAL PROTECTION



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