Upper Wissahickon SAMP / Pilot CARP
DRBC & Montgomery County Planning Commission
Critique Update

November 14, 2008

1. **SAMP/Pilot CARP**
   a. Act 220 Implementation
   b. Pilot for Critical Area Resource Plan (CARP) – guidance and process
   c. Coastal Zone Management (CZM) grant to prepare Special Area Management Plan (SAMP)
   d. Upper Wissahickon Creek selected for pilot
   e. Plan completed June 2008 – Adverse impacts to water resources: Low Base Flow, Degraded Water Quality, Flooding, Channel Instability

2. **Critique Purpose**
   a. Review Pilot CARP Process and recommend changes
   b. Review CARP Guidance document and recommend changes

3. **Critique Presentation**
   a. Overview & Key Findings
   b. Organizational (who)
   c. Technical (what)
   d. Process (how)
   e. Summary of Recommendations

4. **Overview & Key Findings**
   a. Delineate Water Management Areas (WMAs) – sub-watersheds
   b. Re-affirm existing watershed goals
   c. Consider CAAC size – inclusive v. manageable
   d. Establish Technical Team
   e. Ordinance review
   f. Facilitation

5. **Organizational – Suggestions**
   a. Contractor Selection/Capability
   b. Establish Roles & Responsibilities
   c. CAAC membership/composition
   d. Establish Technical Team
   e. Communication techniques
   f. Roles of Regional Committee, PADEP, RBC's, County Planning Commissions

6. **Technical – Suggestions**
   a. Background (e.g., municipal profiles)
   b. Delineate WMAs
   c. Review of existing laws and regulations
   d. Ordinance review
   e. Water supply service areas and interconnects
   f. Stream flow/ecological flows
   g. Demand projections
   h. Water quality meetings with DEP on regulations
   i. Build-out analysis
   j. Implementation planning

7. **Process – Suggestions**
   a. Field visits
   b. CAAC expectations and commitment (e.g., ~5 meetings, etc)
   c. Clear continuous communication with CAAC

d. CAAC watershed tour
e. CAAC involvement in information sharing
f. Small break-out groups of CAAC by WMA
g. CAAC preparation for meetings – best use of time
h. Joint meeting of Regional Committee and CAAC
i. Public meeting/hearing preceded by information open house
j. Press releases and outreach to municipal Environmental Advisory Committees
k. Facilitated comment period of public meeting
l. Survey CAAC at end of work
m. Next steps – implementation plan

8. **Summary of Recommendations**
   a. Consolidated recommendations for CARP Process
   b. Consolidated suggestions for changes CARP Guidance document

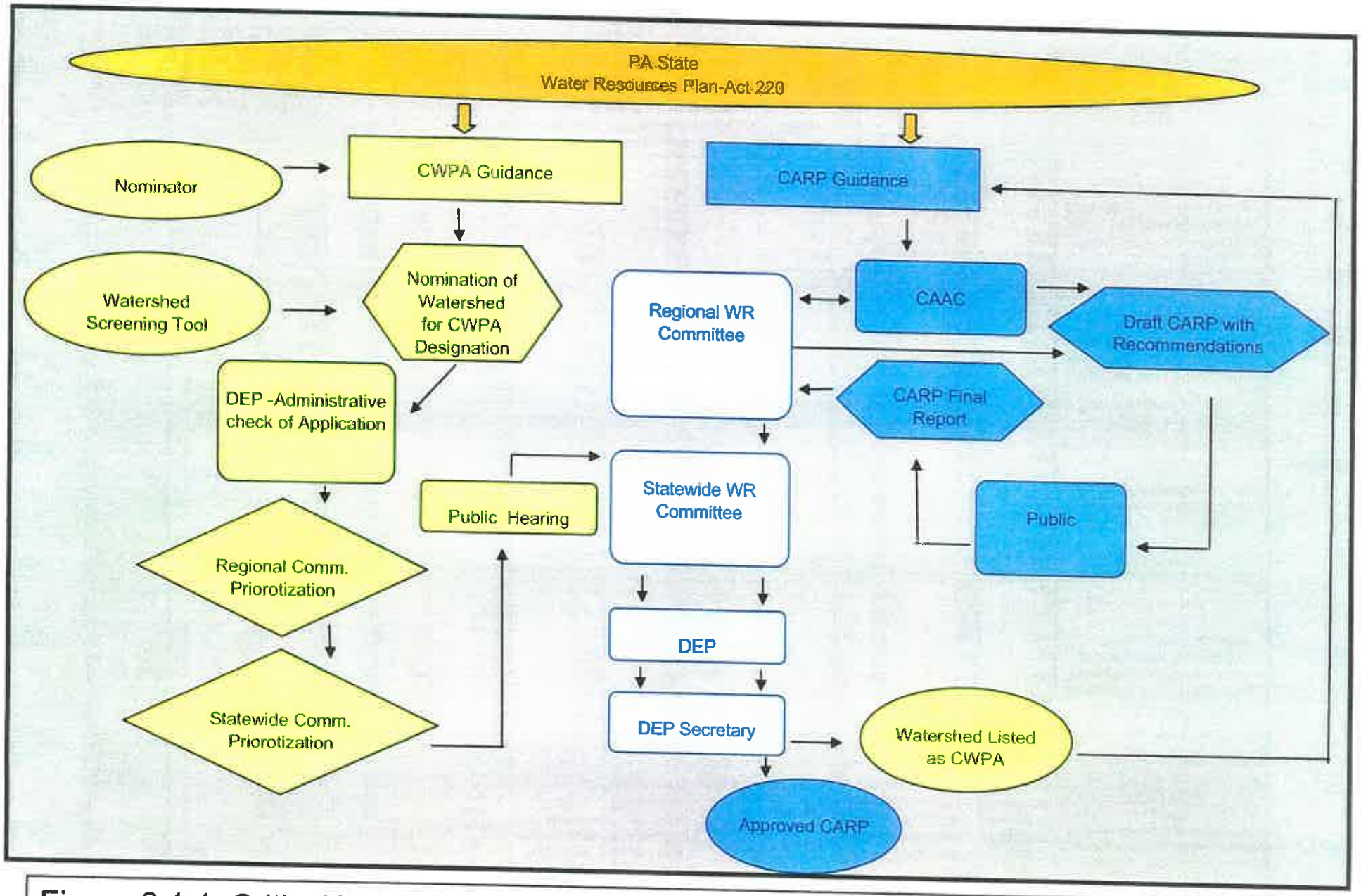

Figure 2.1.1. Critical Water Planning Area Flowchart

Table 1.5 Water Resources Data and Analyses for the Upper Wissahickon Creek Study Area

Issues	Drainage Area (Acres) *	Miles of Stream	IMPERVIOUS SURFACE				WATER SUPPLY	FLOODING & STORMWATER			CHANNEL STABILITY	WATER QUALITY
			Area (Acres)	% Impervious Cover	% of Total Impervious Management Area	% of Total Impervious in Total Study Area	Screening Indicator **	Floodplain Size (Acres)	Units in Flood-plain	Total FEMA Payouts-Repetititve (Losses)	% of Riparian Corridor Vegetated	Parameters that Exceed Water Quality Criteria or Reference Values along Wissahickon Creek***
Total Study Area	**25658**	**81.59**	**6332**	**25%**	**N/A**	**100%**	**10.42**	**1633**	**451**	**$12,646,363**	**47%**	
Management Area 1	**4712**	**13.8**	**1397**	**29.6%**	**100%**	**5%**	**-0.38**	**0**	**0**	**$0**	**45%**	
Upper Gwynedd Township	3008	11.1	858	29%	61%	3%		211	10	0	49%	Fecal coliform, Chlorophyll-a, NO3, TKN, Total Phosphorus, Total Nitrogen, Temperature, Aluminum, TSS, Turbidity
Montgomery Township	708	1.3	242	34%	17%	1%		2	3	0	44%	
Lansdale Borough	444	1.2	125	28%	9%	0.5%		30	32	0	23%	
North Wales Borough	374	0.2	133	36%	10%	1%		2	2	0	0%	
Lower Gwynedd Township	82	0.0	20	24%	1.4%	0.1%		0	0	N/A	N/A	
Worcester Township	65	0.0	13	20%	0.9%	0.1%		0	0	N/A	N/A	
Whitpain Township	31	0.0	6	19%	0.4%	0.0%		0	0	N/A	N/A	
Management Area 2	**7163**	**22.9**	**1605**	**22.4%**	**100%**	**6%**	**2.55**	**504**	**26**	**$94,236**	**41%**	
Lower Gwynedd Township	5074	18.0	1184	23%	74%	5%		394	25	$94,236	45%	Insufficient data. Results expected to be similar to WMA 1 and WMA 3.
Whitpain Township	1543	4.1	197	13%	12%	1%		104	1	0	27%	
Montgomery Township	277	0.3	163	59%	10%	1%		6	0	0	45%	
Upper Gwynedd Township	176	0.5	18	10%	1%	0.1%		18	0	0	4%	
Horsham Township	62	0.0	35	56%	2.2%	0.1%		0	0	N/A	N/A	
Ambler Borough	31	0.0	8	26%	0.5%	0.0%		0	0	N/A	N/A	
Management Area 3	**5292**	**22.3**	**1185**	**22.4%**	**100%**	**5%**	**6.95**	**336**	**124**	**$765,301**	**49%**	
Upper Dublin Township	2314	11.7	529	23%	45%	2.1%		104	6	$258,455	47%	Fecal coliform, Chlorophyll-a, NO3, TKN, Total Phosphorus, Total Nitrogen, Temperature
Whitpain Township	1633	6.0	358	22%	30%	1.4%		119	67	$188,688	54%	
Whitemarsh Township	698	2.8	77	11%	6%	0.3%		59	1	$68,080	60%	
Ambler Borough	515	1.8	192	37%	16%	0.7%		54	50	$243,659	27%	
Lower Gwynedd Township	132	0.0	29	22%	2%	0%		0	0	$6,420	N/A	
Management Area 4	**8491**	**22.6**	**2145**	**25.3%**	**100%**	**8%**	**10.42**	**793**	**301**	**$11,786,826**	**51%**	
Upper Dublin Township	5283	15.0	1370	26%	64%	5%		435	58	$7,976,183	55%	Fecal coliform, Chlorophyll-a, NO3, TKN, Total Phosphorus, Total Nitrogen, Temperature
Abington Township	2112	1.9	564	27%	26%	2%		111	233	$284,486	29%	
Whitemarsh Township	855	4.9	164	19%	8%	0.6%		204	10	$3,033,156	48%	
Springfield Township	203	0.8	27	13%	1%	0.1%		43	0	$493,000	29%	
Upper Moreland Township	25	0.0	12	48%	0.6%	0.0%		0	0	N/A	N/A	
Horsham Township	13	0.0	8	62%	0.4%	0.0%		0	0	N/A	N/A	

* Parameters are calculated for the portion of the municipality that falls within each management area.

** Screening Indicator = 50% Q7-10 (Surface Water Lowflow) + Total Discharges in Drainage Area – Total Withdrawals (Surface and Ground Water Withdrawals) within Drainage Area

*** Source: Philadelphia Water Department, 2007, p. 4.79

Adverse Impacts to Water Resources
Confirmation by Water Management Area

Water Management Area	Municipalities within WMA boundary	Adverse Impacts
WMA 1	Montgomery Township. Lansdale Borough Upper Gwynedd Twp. North Wales Borough	Channel Instability Low Base Flow
WMA 2	Montgomery Twp. Lower Gwynedd Twp. Whitpain Twp.	Degraded Water Quality Flooding
WMA 3	Upper Dublin Twp. Lower Gwynedd Twp. Ambler Borough Whitpain Twp. Whitemarsh Twp.	Degraded Water Quality Channel Instability
WMA 4	Abington Twp. Springfield Twp. Upper Dublin Twp. Whitemarsh Twp.	Flooding Channel Instability

Recommendations Matrix

THE UPPER WISSAHICKON CREEK SPECIAL AREA MANAGEMENT PLAN						
	Rec. 1: Retrofit stormwater basins	**Rec. 2:** Review and update ordinances	**Rec. 3:** Protect source water	**Rec. 4:** Restore stream channel and riparian corridors	**Rec. 5:** Educate homeowners to implement backyard BMPs	**Rec. 6:** Establish a stormwater partnership
Adverse Impacts Mitigated by Each Recommendation					Direct Benefits (✓) Indirect Benefits (*)	
Low Base Flow	✓	✓	*	*	✓	*
Channel Instability	✓	✓	*	✓	✓	
Degraded Water Quality	✓	✓	✓	✓	✓	
Flooding	✓	✓		*	*	✓
Implementation Strategies Outlined in Recommendations Chapter						
Strategy Name	Naturalize and Retrofit through Partnerships	Steep Slopes Ordinance Review	Source Water Protection Program	Restoration on Targeted Parcels	Create a Rain Garden	Establish a Stormwater Authority or Form Stormwater Partnerships
Potential Partnerships	Multi-municipal	Multi-municipal	EAC and municipal staff	Public-private	Watershed groups and EACs	Multi-municipal
Tools	Prioritized Stormwater Basin Retrofits (Figure 10.1.2)	Municipal Ordinance Provisions (Appendix B)	High Priority Resource Protection Areas within the Upper Wissahickon Creek Study Area (Figure 10.3.2)	Stream Channel and Riparian Corridor Restoration Opportunities (Figure 10.4.2)	PWD Homeowners Guide to Stormwater Management (Section 10.5.2)	A stormwater partnership or authority could be formed by one or more of the following options (Section 10.6.2):
Implementation Methods	1. Form partnerships 2. Assess need and prioritize basins 3. Decide type of retrofit for each basin 4. Collaborate on funding and shared resources 5. Calculate cost savings from naturalization 6. Reallocate costs saved from not mowing for other stormwater needs	1. Characterize the grades of the slopes 2. Determine protection level needs 3. Compare zoning ordinances with advisory guidelines 4. Recommend changes to steep slope ordinances 5. Implement changes to ordinances	1. Identify areas to be protected 2. Identify contamination sources 3. Target specific areas to improve source water protection 4. Evaluate water supply protection tools and techniques 5. Develop a source water protection plan	1. Identify area in need of restoration 2. Assess deterrents to restoration 3. Identify areas suitable for restoration 4. Establish municipality and private land-owner partnerships	1. Choose best location on the property 2. Test soil permeability 3. Determine size of rain garden 4. Check for need of local permits and location of underground utilities 5. Dig and plant rain garden with native vegetation 6. Develop maintenance plan to control weeds and infiltration function	♦ Incorporating stormwater management under an existing authority ♦ Establish a new stormwater authority ♦ Establish authority revenues ♦ Create municipal stormwater partnerships ♦ Establish partnership revenues