

# **APPENDIX H.2**

## **STAKEHOLDER MEETING EXIHIBITS**

# **STAKEHOLDER MEETING 1**

## AGENDA

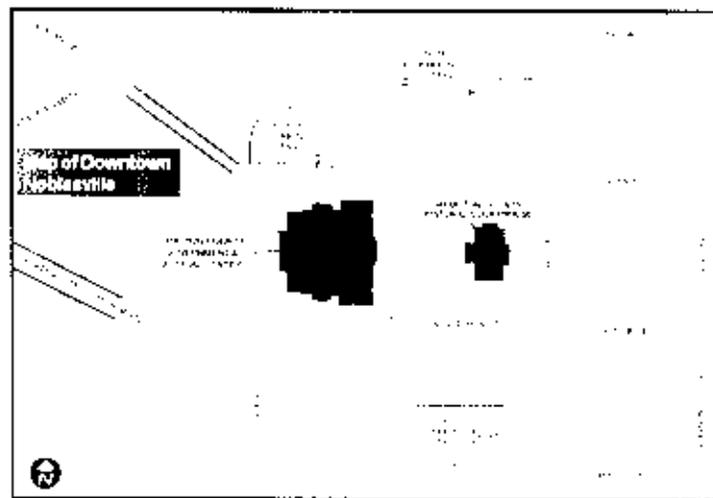
### Stakeholders Steering Committee Kickoff Meeting Cool Creek Watershed Management Plan Hamilton County, Indiana

March 15, 2005 – 1:30 p.m.

Conference Room 1-A  
Hamilton County Government & Judicial Center (see map)

---

1. Introductions and Sign-in-Kent Ward
2. Role of the Steering Committee-IDEM
3. Cool Creek Watershed Overview-Hans Peterson
4. Previous Cool Creek Watershed Planning Efforts-Hans Peterson
5. IDEM Section 319 Watershed Management Plan Components-IDEM
6. Closing and Follow Up Action Items-Hans Peterson



# Watershed Planning

Eric Oliver

eroliver@dem.state.in.us  
(317) 232-2172

Watershed Specialist

Indiana Department of  
Environmental Management

## What Is a Watershed?

A watershed is the area of land that drains  
to a particular point along a stream



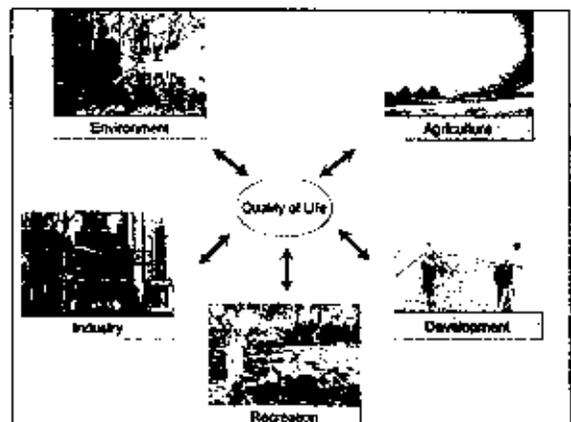
Why should watersheds  
matter to *me*?!



While folks may not always  
realize it, they place a high  
value on healthy watersheds



## Reasons for a Watershed Plan



### When are you ready to write a plan?

- Group works together with respect and trust
- All major interests are represented
- Group is able to make and support decisions

### Reasons for a Watershed Plan...

#### Create a Roadmap

- Where are we now?
- Where do we want to be?
- How are we going to get there?
- How will we know when we have arrived?

### Some basic steps...

- Asset Mapping, who needs to be at the table?
- Voice concerns; develop vision; draw up problem statements
- Inventory the watershed
- Set measurable goals
- Sort through alternatives [to implement]

### Things to Capture in the Plan

- Concerns of the community
- Information gathered in the inventory
- Problem statements
- Causes of water quality problems
- Sources of pollutants or impacts
- Critical areas that need treatment

### Goals of the Plan

- Measurable water-quality and other goals
- Prioritize the goals
- Specific, realistic targets with end dates

### "How do we get there?"

- Practices, planning activities, ordinances, or other tasks the group wants to implement
- Action plan: table showing who will do tasks, when they will get them done, what resources will be required
- Estimated cost of carrying out the plan, and proposed sources of funding or support
- Permits, easements, agreements, acquisitions or other things that have to happen to make the plan work

“How do we know when we get there?”

- Methods of measurement: water quality monitoring, spot checking, participation in events, adoption of practices, etc.
- For each goal or target, there should be a measurement!
- Follow-up on implemented items
  - Maintenance issues
- When will the plan be evaluated? Who will do it? When will you be done?

...& most important...

- Prepare funding requests
- Review the plan regularly
- Don't hesitate to revise and update.
- **Implement the plan!**

## Cool Creek Watershed Management Plan



City of Carmel



Town of Westfield



Hamilton County



Stakeholder Steering Committee  
Kickoff Meeting - Section 319 Grant  
March 15, 2005



## Agenda

- Introductions
- Role of Steering Committee
- Cool Creek Watershed Overview
- Previous Cool Creek Planning Efforts
- IDEM Section 319 Watershed Management Plan Components
- Closing / Follow Up



## Cool Creek Watershed Overview

- Drainage Area - 23.7 sq. mi.
- From 199<sup>th</sup> Street to White River, near 116<sup>th</sup> Street
- Large Portions of Westfield and Carmel and parts of unincorporated Hamilton County
- Lower watershed mostly developed, upper watershed experiencing rapid growth



## Cool Creek Watershed Overview

- Approximately 15 miles of watercourse
- Approximately 50 to 60 percent urbanized
- Impervious area estimate:
  - Urbanized Areas: 40 - 50 %
  - Overall watershed: 20 - 30 %



## Previous Cool Creek Planning Efforts



1997  
Cool Creek Watershed  
Management Plan

2003  
Cool Creek Watershed  
Management Plan  
Update

## Purpose of Previous Planning Efforts (2003 Plan)

- Address Existing Stormwater Flooding Problems
- Prevent Future Problems as the Watershed Continues to Develop
- Compliance with New Federal Regulations Governing Stormwater Quality



## Scope of the Previous Study

- Inventory and Problem Identification
- Problem Analysis
- Solution Development
- Recommendations

## Inventory & Problem Identification

### Map & Plans

- GIS
- USGS
- National Wetland Inventory
- Flood Insurance Rate
- Zoning Maps
- Aerial Photographs



## Inventory & Problem Identification

### Previous Reports & Studies

- ICNR Memorandum – Grassy Branch (2005)
- Hydraulic Report for Village Farms Wellong (1996)
- Countryside Overall System Drainage Report (2004)
- Soil Survey of Hamilton County, Indiana (1978)
- Flood Insurance Studies (study incorporates recent FEMA updates)
- US 31 Improvement Project documents

## Inventory & Problem Identification

### Ordinances & Standards

- Consistent Stormwater Management Controls.
- Detention Facility Requirements.
- Downstream Channel Protection.
- Water Quality Enhancement.
- Prohibition on Development in Floodplains.

## Inventory & Problem Identification

### Public Input

- Public Meetings
- Developer Input
- Interviews with:
  - Local Staff
  - Citizens



## Inventory & Problem Identification

### Problem Area Map

See Map

## Problem Analysis

- **Water Quantity Evaluation**
  - Hydrologic/hydraulic modeling
  - Impacts of future development
- **Water Quality Evaluation**
  - Sampling
  - Existing conditions
  - Policies impacting future conditions

## Problem Analysis

### Hydrologic/Hydraulic Analysis

- Assess the volume and rate of runoff for various storm events
- Evaluate existing stormwater conveyance and storage facilities
- Evaluate stormwater runoff impacts from future development
- Determine appropriate control measures



## Problem Analysis

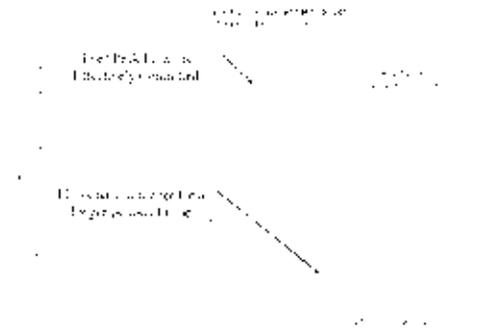
### Effects of Urbanization

- Higher peak flows as a result of urbanization
- County detention policy is effective in controlling peak flows
- Longer flow durations and more frequent "bank-full" conditions tend to exacerbate erosion, especially along the downstream channels.



## Problem Analysis

### Effects of Urbanization



## Problem Analysis

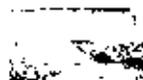
### Hydraulic Evaluation

Conveyance Problems in the Upper Reaches of Cool Creek and its Immediate Tributaries

#### Examples



Rock pile in channel - 171 St. Louis - Cool Creek



Concrete culvert crossing - 171 St. Louis - Cool Creek



Rock pile in channel - 171 St. Louis - Cool Creek

## Problem Analysis

### Stream Channel Evaluation



Severe erosion along lower reach of Cool Creek

Stream Information Capital in Inventory Maps



Floodplain encroachments restrict flow and increases downstream erosion

## Problem Analysis

### Water Quality Evaluation

Entailed:

- Review of the Riparian Corridor
- Assessment of Floodplain Development
- Water Quality Sampling



## Problem Analysis

### Riparian Corridor

Protects Water Quality and Preserves Stream's Natural Characteristics



*Private Riparian Buffer - Cool Creek Watershed S. Ph. 4/11*



*No Riparian Buffer - Cool Creek Watershed S. Ph. 4/11*

## Problem Analysis

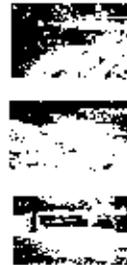
### Floodplain Development

Prohibit development in floodplain to help preserve existing buffers and natural flood storage



## Problem Analysis

### Water Quality Sampling Locations



- 186<sup>th</sup> Street
- 146<sup>th</sup> Street
- 116<sup>th</sup> Street

## Problem Analysis

### Water Quality Sampling Conclusions

- Pollutant constituents and concentrations in Cool Creek – generally comparable to other urban streams across country
- Nutrients levels somewhat high, possibly from excess fertilizer
- Bacteria levels exceed standards for recreational contact during wet weather (*problem is common to nearly all urban watersheds*)
- Stormwater Best Management Practices will help improve water quality

## Solution Development

- Stream Flooding/Road Overtopping Solutions
- Neighborhood Problem Solutions
- Stream Bank Erosion Solutions
- Regional Stormwater Detention
- Future Land Use & Planning Recommendations

## Solution Development

### Streambank Flooding/Road Topping Solutions

- Replace 171<sup>st</sup> Street Bridge and Regrade Roadway
- Regrade Roadway at 151<sup>st</sup> Street bridge
- Replace Gurley Street bridge (Anna Kendall Drain)
- Replace Cherry Street bridge (Anna Kendall Drain)



## Solution Development

### Streambank Flooding/Road Topping Solutions

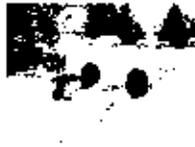
- Replace SR 32 Culvert (J.M. Thompson Drain)
- Replace Culvert Downstream of US 31 (Highway Run)
- Add Culvert to US 31 (Highway Run)
- Replace Waller Street and Waller Court Culverts (Highway Run)
- Replace Private Drive Culvert between Waller Street and Waller Court (Highway Run)
- Replace Thornberry Drive Culvert (Highway Run)



## Solution Development

### Neighborhood Problem Solutions

- Replace Garne Drive Culvert (Hot Lick Creek)



## Solution Development

### Streambank Erosion Solutions

#### Restoration Projects at:

- Highway Run –
  - Downstream of Sinneridge Drive
- 145 Kenyon Drive –
  - Downstream of Rolling Court
- Cool Creek –
  - Upstream of confluence with the White River
  - Downstream of Gray Road at bend
  - Upstream and downstream of Hot Lick Creek
  - Upstream at 131<sup>st</sup> Street (Main Street) and
  - Upstream of Keystone Avenue



## Solution Development

### Regional Stormwater Detention

- Two (2) off-line Regional Detention Basins to Control the Magnitude of Stormwater Flows and Reduce downstream channel erosion
  - Immediately Downstream of 171<sup>st</sup> Street
  - West of Grassy Branch Road
- Retrofit existing regional on-line detention provided by RR embankment on Anna Kendall Drain

## Solution Development

### Regional Stormwater Detention



## Solution Development

### Land Use Planning Recommendations

- **Detention Requirements**  
Improve control of smaller storms (first flush)
- **Stream Buffer Ordinance**  
Grass filter strips, preservation
- **Floodplain Protection**  
Prohibit fill in the floodplain
- **Other Best Management Practices**  
Coordinate with Rule 13 Requirements

## Recommendations

### Cost of Improvements

Stream Flooding: Roadway Developing Solutions -	\$2,720,000
Neighborhood Solutions -	\$100,000
Streambank Erosion Solutions -	\$570,000
Regional Detention Solutions -	\$5,100,000
<b>Total of All Solutions -</b>	<b>\$8,490,000</b>

## Recommendations

### Implementation

- Coordinate water quality recommendations with NPDES / Rule 13 program
- Implement bridge/culvert improvements projects in conjunction with planned roadway projects
- Implement neighborhood projects as local funding allows
- Coordinate streambank stabilization projects with local property owners
- Coordinate regional detention solutions with planned development projects
- Obtain additional input on improvements and funding options (this project – Section 319)

Questions / Feedback?

## **Cool Creek Watershed Management Plan**

March 15, 2005

The meeting was called to order Tuesday, March 15, 2005 at 1:30 PM.

Those present were as follows: Mr. Kenton Ward, Hamilton County Surveyor's Office; Mr. Robert Thompson, Hamilton County Surveyor's Office; Mr. Hans Peterson, Clark Dietz; Mr. Eric Oliver, IDEM; Mr. Andy Cook, Citizen; Ms. Amanda Foley, City of Carmel; Ms. Lora Shrake, CEES (TSPUI); Ms. Amanda Smith, Hamilton County Parks Department; Ms. Sarah Baxter, Williams Creek Consulting; Ms. Chant Laopus, Veolia Water Company; and Mike Deboy, Deboy Land Development Services.

### **Introduction and Sign-in**

Mr. Ward stated that this is the first meeting of the Stakeholder Group Meeting for the Cool Creek Watershed Management Plan.

Mr. Oliver stated that the Steering Committee is the voice of how the direction of the plan would go. Each of you will have an input into this. However the Steering Committee chooses to operate, whether it's on consensus or some other way, but that is what they recommend. The Steering Committee could include all the towns and cities in Hamilton County and the Parks, business interests to regular citizens to try to get input from different aspects of the community. The Steering Committee would make the final decision on the plan versus the public input, but the Committee would take in affect what they have said and come up with a consensus on what the Steering Committee would come up with the Watershed Management Plan. The Committee would be responsible for having Mr. Peterson craft a policy with input from the Committee and any other groups that are interested in implementing the Cool Creek Watershed Plan in the future.

Mr. Thompson stated that they will have quarterly meetings and exchange information. If anyone has questions in between meetings or would like to call a special meeting contact Mr. Thompson, he will be insminating meeting minutes. The minutes and agenda will be posted on the website.

Mr. Peterson stated that Mr. Oliver's presentation is about what a Watershed Management Plan is. Clark Dietz has been doing a lot of watershed planning on Cool Creek and will be modifying the plan based on input and IDEM; acceptable Watershed Management Plan which will allow projects and policies that we identify and implement in the future with potential grant funding.

### **IDEM Section 319 Watershed Management Plan Components**

Mr. Oliver gave his presentation at this time.

## Cool Creek Watershed Management Plan

Mr. Cook stated that it looked like Cool Creek had been study to death. How is this different from what you have been doing in the past?

Mr. Ward stated that most of the studies we have been doing is more on the hydraulics of the stream itself. Where this is more on water quality. There are a couple of places that was established in the first study for basins that will be open water system plus wetlands, to help clean the water in the existing storm 100-year flood plain.

Mr. Peterson stated that we are not starting from scratch on this watershed. We have some ideas on where we are heading. This is a focus on storm water flooding quantity.

Mr. Cook asked if this goes on with other watersheds in the County? Is Cool Creek one going because the population is growing?

Mr. Ward stated we have one other 219 Grant for the Little Clvero Creek also, which is in the northern portion of the County. There is a water study on Stony Creek that is going on and we are weaving water quality and quantity issues together. This office had a water quantity study on Mud Creek and revised the whole floodplain map on that. We found out that the floodplain maps were wrong as much as three (3) feet in elevation for the 100-year flood plain. We are looking at the broad water quantity issues and found the flood plain mapping issue, so we started concentrating on that. We extended the study to do some water quality studies. For the next study we would like to get Westfield and Carmel involved with Williams Creek.

Mr. Peterson asked about asset mapping. Is there any interesting groups or citizens that they should be thinking about?

Ms. Smith stated there are a lot of dedicated patrons to Cool Creek Park. Nothing is organized, but there are a lot of special interest groups, a lot of recreation programs that go on like bird watching for instance. There are a very large group of bird watchers that meet Wednesday, Saturdays and Sundays. They would be highly interested in what is going on. There is an adopt a River Program. A section of Cool Creek could be adopted by Girls Scouts or Boys Scouts; and they could have an acre that they would clean.

Mr. Thompson stated that you see a lot of stream bank erosion on Cool Creek that we can help with.

Ms. Smith stated John South did a project on Cool Creek doing different types of stream bank erosion examples.

Mr. Peterson asked if there were any other uses in the Park, such as people wading in the creek.

Ms. Smith stated that they do program creek stumps through the Park. Everything they do centers around the creek or around the riparian.

## **Cool Creek Watershed Management Plan**

The Park has the National Gardener's Master Naturalist class that we are associated with. There will be a lot of people to rally around the project, there are people who are ready to help.

### **Previous Cool Creek Watershed Planning Efforts**

Mr. Peterson gave his presentation on Watershed Planning Efforts.

### **Closing and Follow Up Action Items**

Mr. Peterson stated they are going to have a public meeting at Cool Creek, April 30 from 7:00 to 9:00 P.M.

Mr. Thompson stated that prior to the public meeting they could look at some demonstrations of erosion control projects. Anyone who is interested could meet at Cool Creek around 6:00 P.M. and anything else the Park would like to show case. The next meeting will be two or three months from now. We will be looking at priorities and setting goals.

Mr. Ward asked how we're getting the word out?

Mr. Thompson stated that one (1) press release has been made in the local papers. They could also put signs in the park.

Meeting adjourned at 2:54 P.M.

# **STAKEHOLDER MEETING 2**

SIGN IN SHEET

Cool Creek Stakeholder Meeting

Cool Creek Watershed Management Plan  
Hamilton County, Indiana

October 4, 2005

1:30 p.m. - 3:00 p.m.

Name	Department/Area of Responsibility	Telephone	E-mail
Bob Thompson	HCSO Program MGR.	no file	no file
Sam Robertson	Clark-Dietz	(317) 582-0300	samuelr@clark-dietz.com
Sky Schelle	IDEM	317-234-4094	SSchock@idem.in.gov
Dorie Casper	Westfield	317-896-5577	casper@westfield.wi.gov
Cassandra Foley	Westfield	317- <del>896</del> 571-2441	afoley@westfield.wi.gov
Fred Dierker	HCSO Plan Revision	776-8495	fred@hcs.wi.gov
Bill Hoffmann	Williams Creek Consulting	423-0690	jhoffmann@williams creek.net

# AGENDA

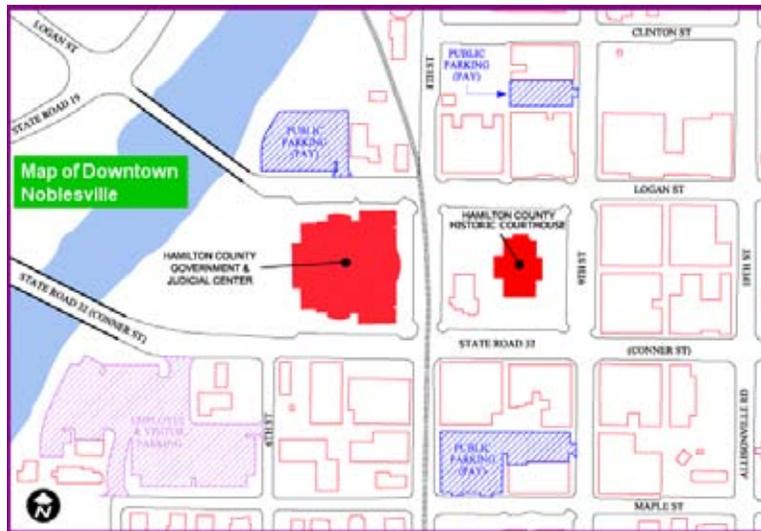
## Stakeholders Committee Meeting Cool Creek Watershed Management Plan Hamilton County, Indiana

October 4, 2005 – 1:30 p.m.

Conference Room 1-A  
Hamilton County Government & Judicial Center (see map)

---

1. Introductions and Sign-in
2. Summary of Input Obtained at First Public Meeting and Interviews with Carmel and Westfield
3. Review Proposed Updates to the Plan to meet the IDEM 319 Checklist. Obtain additional ideas and feedback.
4. Closing and Follow Up Action Items



## STAKEHOLDER MEETING SUMMARY

**Project:** Cool Creek Watershed Management Plan  
**Date:** October 4, 2005  
**Time:** 1:30 p.m.  
**Location:** Hamilton County Surveyor's Office  
**Attendees:** Bob Thompson – Hamilton County  
Hans Peterson – Clark Dietz  
Sam Robertson – Clark Dietz  
Sky Schelle – IDEM  
Carrie Cason – Westfield  
Amanda Foley – Carmel  
Greg Hoyes – Hamilton County  
Jill Hoffman – Williams Creek Consulting

---

On October 4<sup>th</sup>, 2005, a Stakeholder meeting was held at the Hamilton County Surveyor's Office. Hans Peterson made a presentation to update stakeholders as to where the Cool Creek Watershed Management Plan (319 update) was at. The presentation agenda was as follows:

- Introductions/Sign-In
- Overall Project Update
- Summary of Input Received at Public Meetings and Interviews
- Overview of Updates of the Cool Creek Plan (319 checklist)
- Follow-Up Items

The discussion/feedback obtained during and after the presentation is summarized as follows:

- Carmel, Westfield, and Hamilton County are all in the process of updating their stormwater ordinances to address the requirements of Rule 13. Plans are to have the ordinances in place by the end of the year. We discussed that it would be desirable for these entities to have the same floodplain requirements as Hamilton County (no fill in the floodplain unless a variance is obtained requiring 10:1 mitigation for lost storage). Amanda thought Carmel was just beginning the ordinance update process and would mention this. Carrie Cason will also bring this feedback back to Westfield. Hans noted that a goal of the study was to have unified, consistent floodplain (and other stormwater) policies in the watershed.
- Carrie Carson noted that the planned recreational trail along Cool Creek near Washington Woods Elementary School is still about five years away. The

## Meeting Minutes

Cool Creek Watershed Management Plan

10-04-05

Page 2

potential park at the site of the current Public Works facility is not planned for anytime in the near future. Hans Peterson noted the linkage opportunities that would be available if the Oak Manor Regional Stormwater Quality Facility, along with the trail and park facilities, were constructed. Bob Thompson noted that we have submitted a 319 grant application for implementation of the Oak Manor facility.

- Hans Peterson noted that during the Westfield Interview, the only major new development being planned in the upper watershed is Sycamore. Carrie indicated that is still true. Hans Peterson asked if any special BMPs were planned for this development. Greg Hoyes noted that Sycamore is only at the platting stage (no detailed plans yet). The proposed development is located at 191<sup>st</sup> Street and Tomlinson Road (southwest quadrant).
- It was noted that during the interviews this past summer, Carmel Director of Parks and Recreation, Mark Westermeier, expressed interest in streambank erosion control measures in Flowing Well Park. There are some stream reaches with severe erosion in this park. Bob Thompson indicated this might be another possible pilot streambank restoration project with the Hamilton County SWCD.
- A follow-up should be made concerning the CEES/Cool Creek Park Partnership and their upcoming workday to remove invasive species in Cool Creek Park.
- Bob Thompson noted that the recent sanitary sewer overflow (SSO) occurred at the Hamilton Square Apartments (west of Cool Creek at 169<sup>th</sup> Street). This appears to have been a private property problem (grease build-up) that has been taken care of. Bob noted the new IDEM website that posts information on SSOs.
- Concerning the recent fish kill in Cool Creek, Bob Thompson said that Cool Creek may have to be restocked. The case is in IDEM and IDNR's hands for potential enforcement action. Bob also noted that even though the publicity was negative, it does raise awareness on the potential for creeks to become polluted by spills.
- Carrie Carson said that the Westfield Comprehensive Plan, currently in the process of being updated, would not be completed until at least June 2006.
- It was noted that we should continue to review volunteer (Hoosier River Watch) monitoring data being collected in Cool Creek (coordinate with Amanda Smith, Chief Naturalist - Hamilton County Park and Recreation/Cool Creek Nature Center).

## **Meeting Minutes**

Cool Creek Watershed Management Plan

10-04-05

Page 3

- The next Upper White River Watershed Alliance Technical Committee Meeting is Nov. 2. We should plan on using this as another opportunity for Stakeholder involvement. Bob Thompson will get us on the agenda.
- Bob Thompson said we should discuss the impact of the Rule 13 requirements on the Cool Creek Watershed and how they could be a positive for the Cool Creek Watershed Management Plan. He said erosion control in the future should be better because there will be more inspectors since the SWCD is turning over duties to the County (for areas in their jurisdiction). Carmel and Westfield will also be taking over the Erosion and Sediment Control programs in their communities as well.
- Hans said Clark Dietz will try and meet with John South of the SWCD to review agricultural practices in the watershed.
- Hans Peterson asked the group if there were any key issues, problems, goals, etc. that were missing from the plan. Carmel and Westfield indicated they thought everything was covered. Sky Schelle indicated the only glaring thing he saw that was missing was addressing critical areas and load reductions. Sam Robertson indicated that we are working on these areas of the report.

## Cool Creek Watershed Management Plan

Stakeholder Meeting  
October 4, 2005



## Agenda

- Introductions / Sign-In
- Overall Project Update
- Summary of Input received at Public Meeting and Interviews
- Overview of Updates of the Cool Creek Plan (319 checklist)
- Follow-Up Items



Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2005

## Overall Project Update

- Activities Since First Stakeholder Meeting
  - Public Meeting - April 13<sup>th</sup>
  - Interviews with Carmel and Westfield – June 20<sup>th</sup>
  - Newspaper Articles
  - 2<sup>nd</sup> Quarter Report
  - IDEM Progress Meetings
  - Working on Plan Updates



Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2005

## Public Meeting Feedback

- Interest, Concern, Questions regarding:
  - Stream impairment, types of contaminants, impact of golf courses
  - Funding, where is money coming from for improvements, regulated drain status
  - Invasive species, loss of native species
  - Beaver problems
  - Impact of U.S. 31 project in Hamilton County
  - Using wetlands for retention
- Specific areas noted for future BMPs:
  - 161<sup>st</sup> and Westfield Blvd (owned by Westfield?) – constructed wetland
  - Washington Woods Elementary School (Grassy Branch)



Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2005

## Interview Feedback



- Would like to adopt a floodplain ordinance similar to Hamilton County (no fill w/o 10:1 compensation)
- Plans for recreational trail along Cool Creek near new school (Washington Elementary)
- Lots of Beaver activity along Grassy Branch
- No major developments planned except for Sycamore (pending annexation)
- Potential for nitrate being discharged by holding ponds on Heartland Growers property
- Four neighborhoods still on septic systems, some with failure problems. Would like to get on Westfield sewers.



Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2005

## Interview Feedback



- Interested in constructing recreational trails along Cool Creek and its Tributaries
- Priorities for Potential Improvements
  - Replace bridges and upgrade roads to reduce overtopping during floods
  - Replace undersized culverts
  - Construct regional detention facilities to reduce downstream erosion and improve water quality
  - Provide sewers to the few neighborhoods still on septic systems



Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2005

## Interview Feedback



- Rules (regulations) for doing streambank stabilization work
- Interested in Hamilton County floodplain ordinance, would like something similar for Carmel
- Very few homes on septic systems
- Concern (staffing, resources, etc.) over taking over erosion and sediment control from SWCD
- Most complaints in Cool Creek are flooding/drainage. Second is streambank erosion
- Carmel has been requiring stream mitigation to compensate for impacts from road projects
- Severe streambank erosion problem at Flowing Well Park (high priority to address)



Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2005

## Other “Goings-On” in the Watershed (the good, the bad, and the ugly!)



April 2005



September 2005

Streambank Restoration – Cool Creek Park  
by Hamilton County SWCD



Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2005

## Other “Goings-On” in the Watershed (the good, the bad, and the ugly!)



April 2005



September 2005

Streambank Restoration – Cool Creek Park  
by Hamilton County SWCD



Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2005

## Other “Goings-On” in the Watershed (the good, the bad, and the ugly!)



April 2005



September 2005

Streambank Restoration – Cool Creek Park  
by Hamilton County SWCD



Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2005

## Other “Goings-On” in the Watershed (the good, the bad, and the ugly!)



April 2005



September 2005

Streambank Restoration – Cool Creek Park  
by Hamilton County SWCD



Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2005

## Other “Goings-On” in the Watershed (the good, the bad, and the ugly!)



CEES/Cool Creek Park  
Partnership

Removal of Invasive Species  
(Brush Honeysuckle) in Cool  
Creek Park



Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2005

## Other “Goings-On” in the Watershed (the good, the bad, and the ugly!)



PERMIT #	PAISLEY POSE	ISSUE #	PERMIT DATE	DURATION	CATEGORY	LOCATION	RECEPTION AREA	REASON	ACTION
	WESTFIELD PUBLIC UTILITIES		10/1/2004	1 YEAR	SEWER	WESTFIELD	TRIP 101	SEWER OVERFLOW	IMPROVED

Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2005

## Other “Goings-On” in the Watershed (the good, the bad, and the ugly!)



**Cool Creek polluted**  
By Bob Hanson | Editor

WESTFIELD — Rainwater mixed with dog residue apparently created a toxic substance that killed fish in Cool Creek Wednesday.

About 70 to 100 fish were killed, and the water for about three miles was discolored. According to Barry Sneed, a public information officer at the Indiana Department of Natural Resources, water laden with ammonium nitrate flowed into a storm sewer outlet at Westfield, located at 1211 State Road 32 East in Westfield. Workers from that agency were called to the scene after local officials found the source of the spill. They were still investigating Thursday.

"At this time, we don't believe there are any continuing effects," Sneed said Thursday afternoon.

An area resident called the Town of Westfield's public works department complaining that a creek had turned black and smelled like petroleum, said Kurt Waininger, operations manager for the Department of Public Works.

The public works department located the source of the problem and called the state agency.

Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2005

## Cool Creek Watershed Management Plan Updates

- Adding New Chapter 9.0 – Section 319 Watershed Management Plan Updates
- Adding New Appendix H – Section 319 Exhibits
- Keeps the integrity/history of the original 2003 document
- References applicable sections of 2003 document
- Includes new information to meet 319 Checklist

Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2005

## Chapter 9.0 Contents

- 9.1 Introduction
- 9.2 Watershed Description
- 9.3 Water Quality Evaluation and Benchmarks
- 9.4 Problem Statements and Goals
- 9.5 Implementation Measures
- 9.6 Evaluating, Monitoring, and Adapting the Plan

Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2005

## 9.1 Introduction

- Mission Statement
  - Preserve and improve the overall health of the Cool Creek Watershed by addressing existing stormwater quantity and quality concerns and by proactively guiding future stormwater management practices and decisions
- Partnerships
  - Hamilton County, Westfield, Carmel, developers, general public, other members of Stakeholder Committee

Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2005

## 9.2 Watershed Description

- Generally adequately described in 2003 Plan
- Additional information included:
  - Land Use Breakdown
  - New Land Use Mapping (Westfield)
  - Population Trends

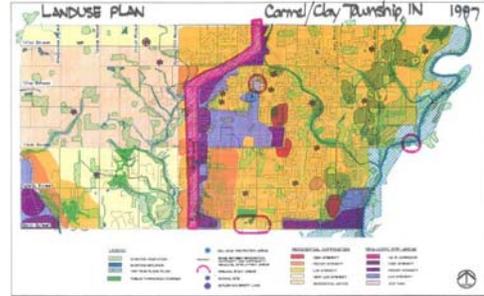
Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2005

### 9.3 Watershed Description (land use)



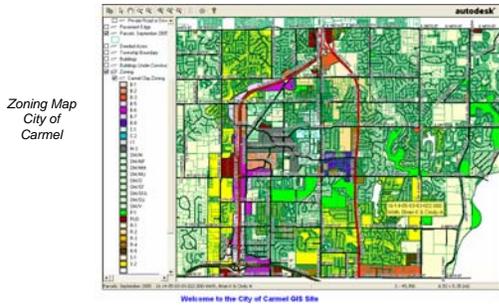
Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2005

### 9.3 Watershed Description (land use)



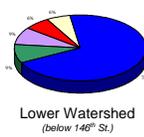
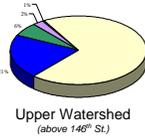
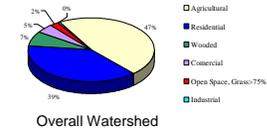
Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2005

### 9.3 Watershed Description (zoning)



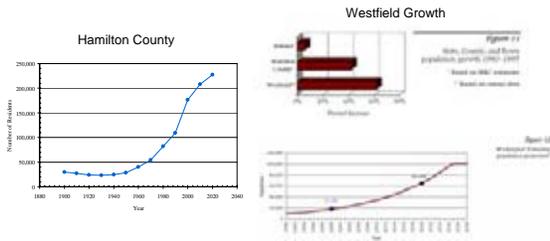
Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2005

### 9.2 Watershed Description (land use)



Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2005

### 9.3 Watershed Description (population)



Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2005

### 9.3 Water Quality Evaluation and Benchmarks

- Utilized sampling data from 2003 Cool Creek Plan
  - Cool Creek – 3 locations in watershed, dry and wet weather
  - Visual (Stream Inventory Maps)
- IDEM Assessment Branch Data
  - 1992, 1996, and 2001 data
  - Data collected in lower watershed (Hazeldeil or Gray Road)
  - Lab data, field data, macroinvertebrate
- Volunteer Monitoring (Hoosier River Watch)
  - 2001, 2002, 2004, 2005
  - 136<sup>th</sup> Street, 146<sup>th</sup> Street
  - Streamflow, Chemical, Biological, Habitat

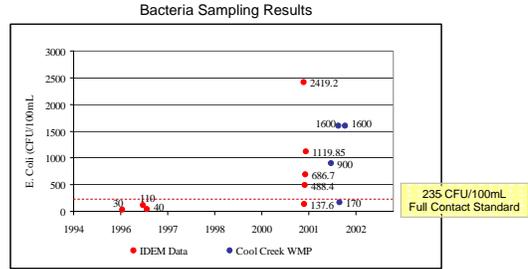
Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2005

### 9.3 Water Quality Evaluation and Benchmarks (2003 Cool Creek Plan)

Parameter	Typical Max. Value Reported in Literature	116th Street Crossing				146th Street Crossing				166th Street Crossing			
		Dry Weather		Wet Weather		Dry Weather		Wet Weather		Dry Weather		Wet Weather	
		04/21/06	04/28/06	05/05/06	05/12/06	06/02/06	06/09/06	06/16/06	06/23/06	07/07/06	07/14/06	07/21/06	07/28/06
BOD	mg/L	10	15	15	15	15	15	15	15	15	15	15	15
DO	mg/L	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Nitrogen, Kjeldahl	mg/L	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36
Nitrogen, Nitrate	mg/L	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36
Nitrogen, Ammonia	mg/L	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Nitrogen, Total	mg/L	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
Nitrogen, Organic	mg/L	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34
Phosphorus, Dissolved	mg/L	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Phosphorus, Total	mg/L	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Phosphorus, Soluble	mg/L	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Total Solids	mg/L	100	100	100	100	100	100	100	100	100	100	100	100
Total Suspended Solids	mg/L	100	100	100	100	100	100	100	100	100	100	100	100
Total Phosphorus	mg/L	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Nitrogen	mg/L	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Chlorine Res	mg/L	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fluoride	mg/L	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Copper	mg/L	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nickel	mg/L	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc	mg/L	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

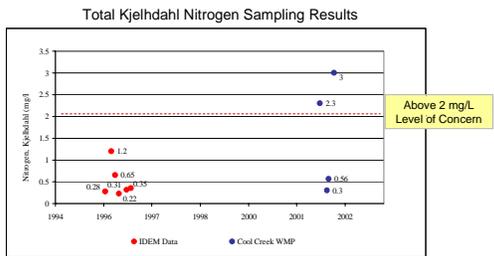
Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2005

### 9.3 Water Quality Evaluation and Benchmarks (IDEM Assessment Branch Data)



Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2005

### 9.3 Water Quality Evaluation and Benchmarks (IDEM Assessment Branch Data)



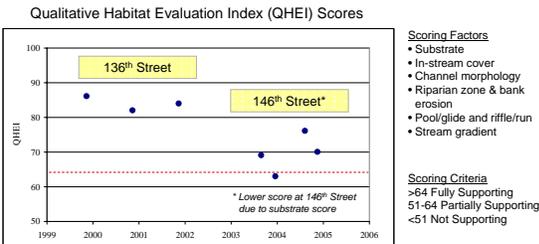
Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2005

### 9.3 Water Quality Evaluation and Benchmarks (IDEM Assessment Branch Data)

- Benthic aquatic macroinvertebrate Index of Biotic Integrity (mIBI)
  - Sampling conducted in 1992
  - Cool Creek at 116th Street
- Resultant Score: 4
- Interpretation
  - Fully Supporting: mIBI ≥ 4
  - Partially Supporting: mIBI < 4 and ≥ 2
  - Not Supporting: mIBI < 2

Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2005

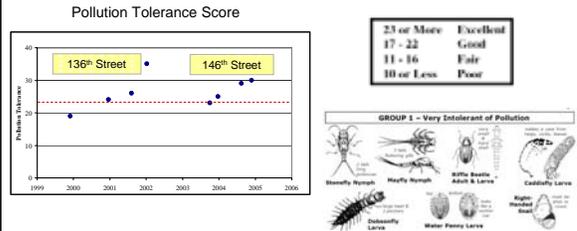
### 9.3 Water Quality Evaluation and Benchmarks (Volunteer Monitoring – Habitat Data)



- Scoring Factors**
- Substrate
  - In-stream cover
  - Channel morphology
  - Riparian zone & bank erosion
  - Pool/glide and riffle/run
  - Stream gradient
- Scoring Criteria**
- >64 Fully Supporting
  - 51-64 Partially Supporting
  - <51 Not Supporting

Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2005

### 9.3 Water Quality Evaluation and Benchmarks (Volunteer Monitoring – Biological Data)



**23 or More Excellent**  
**17 - 22 Good**  
**11 - 16 Fair**  
**10 or Less Poor**

**GROUP 1 - Very Intolerant of Pollution**

- Heavily Tolerant
- Heavily Tolerant
- White Swallow Adult & Larvae
- Right-headed Caddisfly Larva
- Dobsonfly Larva
- Water Penny Larva

Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2005

## 9.4 Problem Statements and Goals (Stressors and Sources)

- **Streambank Erosion**
  - Urbanization (increase in impervious areas)
  - Impacts of detention basins (longer bank full flow conditions)
  - Encroachments
- **Sedimentation**
  - Inadequate erosion control on construction sites
  - Limited agricultural buffers in upper watershed
- **Elevated nutrients in wet weather runoff**
  - Fertilizers (agricultural and lawn)
  - Pond overflow from major plant growing facility



Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2015

## 9.4 Problem Statements and Goals (Stressors and Sources)

- **Bacteria (now listed as non-supportive for primary contact on 305(b) report, on 303(d) list for E.Coli)**
  - Wildlife, pet waste
  - Leaky septic systems
  - SSOs, spills, general urbanization
- **Flooding problems**
  - Inadequate bridges, culverts
  - Undersized local drainage systems
  - Floodplain development
- **Loss of Ecological Diversity in Riparian Areas (Cool Creek Park)**
  - Influx of invasive species (Bush Honeysuckle)



Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2015

## 9.4 Problem Statements and Goals

- **Problem Statements:**
  - Continued urbanization in the upper Cool Creek Watershed is increasing streambank erosion, degrading aquatic habitat, and increasing the stormwater pollutants in runoff
  - Lack of riparian buffers in the agricultural areas on the upper Cool Creek Watershed increase downstream sediment loads and provide limited aquatic habitat
  - Inadequate construction site erosion and sediment controls threaten downstream aquatic habitat
  - High nutrient levels (particularly ammonia) caused by both urban and agricultural runoff threaten aquatic life



Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2015

## 9.4 Problem Statements and Goals

- **Problem Statements:**
  - Increased bacterial levels caused by urbanization and other sources have impaired full contact recreation use of Cool Creek
  - The influx of invasive species such as the Bush Honeysuckle has resulted in reduced ecological diversity in forested areas of Cool Creek such as Cool Creek Park
  - Inconsistent floodplain regulations has resulted in loss of floodplain storage and riparian habitat
  - Undersized bridges and culverts cause result in roadway overtopping and threaten public safety



Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2015

## 9.4 Problem Statements and Goals

- **Goals:**
  - Reduce impact of urbanization by modifying stormwater detention policy to control smaller storms and treat the first flush of runoff
  - Implement consistent floodplain development restrictions by adopting necessary legal authority (ordinances)
  - Develop comprehensive erosion and sediment control program in Carmel and Westfield (ordinance, plan review, inspection, enforcement)
  - Provide public education and outreach to residents and business in Cool Creek Watershed to promote good watershed behavior (disposal of pet waste, proper lawn chemical use, illicit discharges, etc.)
  - Construct the bridge and culvert conveyance improvement projects to reduce flood hazards and protection public safety
  - Continue program (CEES, Cool Creek Park) to remove invasive species and protect ecological diversity in forested areas



Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2015

## 9.4 Problem Statements and Goals

- **Goals:**
  - Implement the Oak Manor Regional Stormwater Quality Facility to reduce downstream channel erosion and reduce non-point source pollutant levels (nutrients, metals, bacteria)
  - Repair/restore severe channel erosion in the lower reaches of Cool Creek to improve aquatic habitat, reduce sedimentation, and protect public and private facilities
  - Provide additional agricultural BMPs (buffer strips, conservation tillage) in the upper watershed to reduce downstream sediment and nutrient loads)
  - Improve the riparian habitat in the upper watershed by establishing stream buffers and vegetation as agricultural areas are developed
  - Provide sanitary sewer service to the limited neighborhood areas in Westfield still on septic systems



Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2015

## 9.5 Implementation Measures

- Prioritize projects (critical areas, load reductions)
- Capital improvement projects (Oak Manor regional stormwater quality facility, streambank stabilization, bridge/culvert replacements, septic elimination, etc.)
- Policy/ordinance updates (floodplains, erosion and sediment control, detention policy, buffer strips, other post-construction BMPs)
- Review and modify agricultural practices
- Public education/outreach programs and materials
- Developer agreements

 Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2015

## 9.6 Evaluating, Monitoring Plan

- Ongoing, periodic Stakeholder Meetings (after 319 project is over)
- Use of water quality monitoring data
- Visual inspection
- Reviewing progress on implementation of recommended improvements
- Adjust, update the plan as needed
- Achieve the Mission:
  - *Preserve and improve the overall health of the Cool Creek Watershed by addressing existing stormwater quantity and quality concerns and by proactively guiding future stormwater management practices and decisions*

 Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2015

## Follow Up, Action Items

- Complete draft Section 319 Cool Creek Watershed Management Plan by end of October
- Additional stakeholder involvement
  - Upper White River Watershed Alliance?
  - Stakeholder meeting(s) to review draft, finalize plan
- Public Meeting
  - In conjunction with Hamilton County Drainage Board
- Newspaper Article
  - Streambank stabilization project in Cool Creek Park
  - Update on the Plan

 Stakeholder Meeting  
Cool Creek Watershed Management Plan Update  
October 4, 2015

# **STAKEHOLDER MEETING 3**



UPPER WHITE RIVER WATERSHED ALLIANCE/COOL CREEK  
STAKHOLDER

Meeting

November 2, 2005

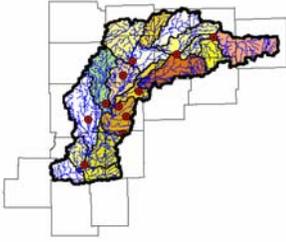
Please Print

NAME & Co./Dept.:

E-MAIL:

Summer O'Brien/Williams Creek	sobrien@williams creek.net
Rob Thompson	
Hans Peterson	hansp@clark-dietz.com
WALTER EVANS	wae@co.hamilton.in.us
Sam Robertson	samucl@clark-dietz.com
Rob Shumowsky	rjshum@necog.net
MEG ANDERSON	manderson@cbbel-in.com
LARRY STOUT	
William (Bill) SAVAGE/city of Elwood	savagewd@hotmail.com
Kent Waas /Ham Co. Surveyor	
Chris Meador / American Council	cmeador@americans.com
Bob Meyer	robert.meyer@comcast.net
John Bueckler	John Bueckler

FA\* TO:  
HANS  
PETERSON



UPPER WHITE RIVER WATERSHED ALLIANCE, INC.  
Technical Committee Meeting  
Wednesday, November 2, 2005 @ 2:00 PM  
Commissioners Conference Room 1-A  
Judicial Building  
One Hamilton County Square, Noblesville, IN.

## AGENDA

Welcome and Introductions: Kent Ward, Technical Committee Chair

Review minutes of Sept 1, 2005

UWRWA GIS Project Update John Buechler-Polis Center  
a. Project oversight committee report-  
b. Old web site information transfer to new site.

Guide Lamp Trustee Projects update-Carl Wodrich

UWRWA Golf Outing-Recap

Cool Creek 319 Project Summary-Hans Peterson-Clark-Dietz

Other Business

Next Meeting Date

## STAKEHOLDER MEETING SUMMARY

**Project:** Cool Creek Watershed Management Plan  
**Date:** November 3, 2005  
**Time:** 2:00 p.m.  
**Location:** Hamilton County Surveyor's Office  
**Attendees:** Kent Ward – Hamilton County Surveyor's Office  
Walter Evans – Hamilton County Surveyor's Office  
Bob Thompson – Hamilton County Surveyor's Office  
Larry Stout – Hamilton County ISSD  
Bill Savage – City of Elwood  
Hans Peterson – Clark Dietz  
Sam Robertson – Clark Dietz  
Chris Meador – American Consulting  
Summer O'Brien – Williams Creek Consulting  
Rob Schumowsky – MCCOG  
Meg Anderson – Christopher B. Burke Engineering  
Bob Meyer – Upper White River Board of Trustees  
John Buechler – Polis Center

---

On November 2<sup>nd</sup>, 2005, the Technical Committee of the Upper White River Watershed Alliance (UWRWA) met at the Hamilton County Surveyor's Office. A portion of the meeting was dedicated to obtaining additional stakeholder input for the Cool Creek Watershed Management Plan. Cool Creek is a tributary to the Upper White River. The meeting agenda was as follows:

- Welcomes and Introductions
- Review Minutes
- UWRWA GIS Project Update
- Guide Lamp Trustee Projects
- Cool Creek 319 Project Summary
- Other Business
- Next Meeting Date

Hans Peterson made a presentation to attendees detailing the Cool Creek Watershed Management Plan (319 update). The agenda for his presentation was as follows:

- Cool Creek Watershed Overview
- IDEM Section 319 Update Requirements
- Recent Watershed Activities
- Overview of Updates of the Cool Creek Plan (319 checklist)
- Input/Feedback/Questions

## Meeting Minutes

Cool Creek Watershed Management Plan

11-02-05

Page 2

The discussion/feedback obtained during and after the Cool Creek presentation is summarized as follows:

- During the presentation Mr. Peterson mentioned that part of our project is to submit articles to the local newspapers. We've had mixed success with getting them published. An article was recently submitted concerning the pilot stream bank restoration project in Cool Creek Park completed by the Hamilton County SWCD. The local newspapers declined to publish it. Bill Savage, with the City of Elwood, said that they had similar problems in getting the newspaper to publish news releases about their Little Duck Creek/Lilly Creek watershed project.
- Mr. Pratt asked if there was a program for promotion of low or no phosphorous fertilizers in the Cool Creek Watershed Management Plan. He stated that IDEM has a brochure on the subject that you can request in bulk and get from their website. Mr. Pratt passed out copies of the brochure at the meeting. Mr. Peterson and Mr. Thompson noted that the communities in the Cool Creek watershed have their own brochures on lawn chemical application practices; however, phosphorous free fertilizers are not specifically mentioned as a recommended practice. Mr. Pratt also mentioned that one way to help promote no phosphorous fertilizers is to let homeowners know that it helps reduce algae in neighborhood detention ponds and the associated odors that can be caused by algae.
- A question was posed as to who would own and maintain the proposed regional stormwater quality facilities, such as the proposed Oak Manor facility. Mr. Ward noted that this is yet to be worked out, but that it could possibly be the parks department or a homeowners association with deed restrictions that would require proper maintenance and usages. An additional question asked how maintenance of these facilities would be funded. Mr. Ward said that this would be a good reason for the parks department to be responsible. More meetings will be required to finalize this issue.
- It was noted that the Central Indiana Land Trust (CILT) is buying riparian lands. In the past, these riparian lands were being sold for approximately \$3000 per acre. The last one was sold for \$8000 per acre. The market place may be seeing more value in riparian lands. Perhaps there is higher demand for these lands by developers looking to use them as a development amenity rather than liability. A large tract of riparian land at Eller Road and 116<sup>th</sup> Street was recently purchased by CILT. It includes 78 acres that will be converted to hardwoods or tall grass prairie.
- The issue of septic systems was briefly discussed as Mr. Peterson noted that the Town of Westfield has a few neighborhoods still on septic systems. Mr. Pratt noted that IDEM is giving credit to combined sewer communities that

**Meeting Minutes**

Cool Creek Watershed Management Plan

11-02-05

Page 3

have programs to eliminate septic systems (Indianapolis was discussed as an example). Mr. Pratt noted that the West Nile virus thrives in slow moving wet areas with high nutrients such as failing septic fields and wanted to encourage the communities to seek out these areas and build sewers to eliminate the septic systems. Mr. Ward said that Noblesville is currently addressing areas that are on septic systems and are looking to sewer these communities.

## Cool Creek Watershed Management Plan

Upper White River Watershed Alliance  
 Technical Committee  
 Stakeholder Meeting  
 November 2, 2005



## Agenda

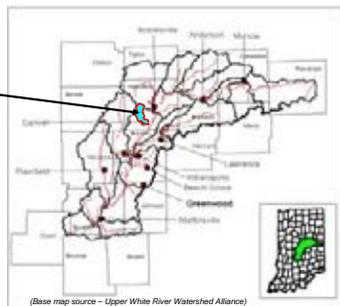
- Cool Creek Watershed Overview
- IDEM Section 319 Update Requirements
- Recent Watershed Activities
- Overview of Updates of the Cool Creek Plan (319 checklist)
- Input/Feedback/Questions



Stakeholder Meeting – UWRWA Technical Committee  
 Cool Creek Watershed Management Plan Update  
 November 2, 2005

## Cool Creek Watershed

- HUC Name
  - Cool Creek-Grassy Branch/Little Cool Creek
- HUC 14-digit
  - 051201090030



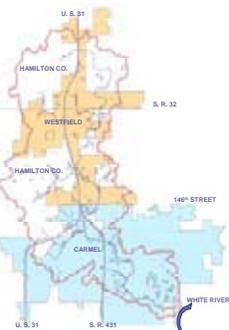
(Base map source – Upper White River Watershed Alliance)



Stakeholder Meeting – UWRWA Technical Committee  
 Cool Creek Watershed Management Plan Update  
 November 2, 2005

## Cool Creek Watershed

- Drainage Area ~ 23.7 mi.2
- From 199th Street to White River, near 116th Street
- Large Portions of Westfield and Carmel and parts of unincorporated Hamilton County
- Lower watershed mostly developed, upper watershed experiencing rapid growth



Stakeholder Meeting – UWRWA Technical Committee  
 Cool Creek Watershed Management Plan Update  
 November 2, 2005

## Cool Creek Watershed

- Approximately 15 miles of watercourse
- Approximately 50 to 60 percent urbanized
- Impervious area estimate:
  - Urbanized Areas 40 – 50 %
  - Overall watershed 20 – 30 %



Stakeholder Meeting – UWRWA Technical Committee  
 Cool Creek Watershed Management Plan Update  
 November 2, 2005

## Project Overview

- Section 319 Contract
  - Term January 1, 2005 – December 31, 2005
- Contract Tasks
  - Produce a Watershed Management Plan (Update to November 2003 Plan)
  - Stakeholder Committee Meetings (4)
  - Interviews (Hamilton County, Westfield, Carmel)
  - Public Meetings (2)
  - Newspaper Articles (4)



Stakeholder Meeting – UWRWA Technical Committee  
 Cool Creek Watershed Management Plan Update  
 November 2, 2005

## Recent Watershed Activities



April 2005



September 2005

Streambank Restoration – Cool Creek Park  
by Hamilton County SWCD



Stakeholder Meeting – UWRWA Technical Committee  
Cool Creek Watershed Management Plan Update  
November 2, 2005

## Recent Watershed Activities



April 2005



September 2005

Streambank Restoration – Cool Creek Park  
by Hamilton County SWCD



Stakeholder Meeting – UWRWA Technical Committee  
Cool Creek Watershed Management Plan Update  
November 2, 2005

## Recent Watershed Activities



April 2005



September 2005

Streambank Restoration – Cool Creek Park  
by Hamilton County SWCD



Stakeholder Meeting – UWRWA Technical Committee  
Cool Creek Watershed Management Plan Update  
November 2, 2005

## Recent Watershed Activities



April 2005



September 2005

Streambank Restoration – Cool Creek Park  
by Hamilton County SWCD



Stakeholder Meeting – UWRWA Technical Committee  
Cool Creek Watershed Management Plan Update  
November 2, 2005

## Recent Watershed Activities

*CEES/Cool Creek Park Partnership*  
*Removal of Invasive Species (Brush Honeysuckle) in Cool Creek Park*



Stakeholder Meeting – UWRWA Technical Committee  
Cool Creek Watershed Management Plan Update  
November 2, 2005

## Recent Watershed Activities

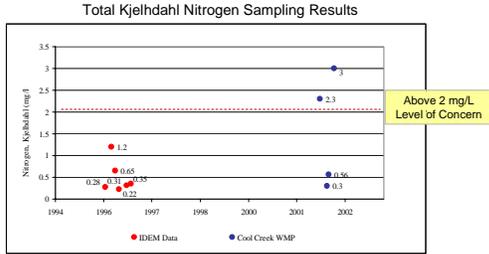
PERIOD	EMILY'S PLACE	COUNTY	PERMANENT RATE	DEPARTMENT	SALARIES	EMPLOYMENT	REVENUE	REVENUE PER PERSON	REVENUE PER PERSON	ACTIVITY
2005	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%



Stakeholder Meeting – UWRWA Technical Committee  
Cool Creek Watershed Management Plan Update  
November 2, 2005



## Water Quality Benchmarks (IDEM Assessment Branch Data)



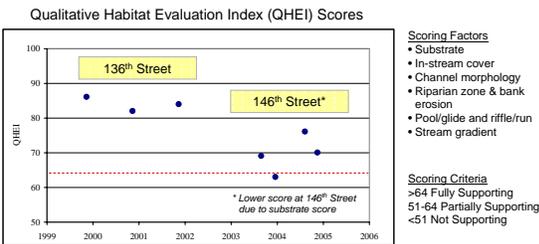
Stakeholder Meeting – UWRWA Technical Committee  
Cool Creek Watershed Management Plan Update  
November 2, 2005

## Water Quality Benchmarks (IDEM Assessment Branch Data)

- Benthic aquatic macroinvertebrate Index of Biotic Integrity (mIBI)
  - Sampling conducted in 1992
  - Cool Creek at 116<sup>th</sup> Street
- Resultant Score: 4
- Interpretation
  - Fully Supporting: mIBI ≥ 4
  - Partially Supporting: mIBI < 4 and ≥ 2
  - Not Supporting: mIBI < 2

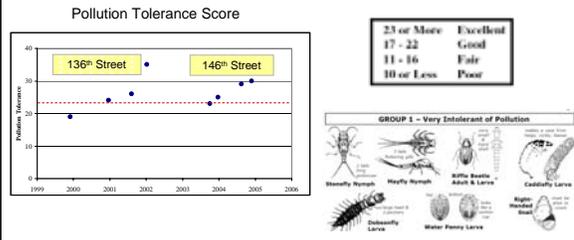
Stakeholder Meeting – UWRWA Technical Committee  
Cool Creek Watershed Management Plan Update  
November 2, 2005

## Water Quality Benchmarks (Volunteer Monitoring – Habitat Data)



Stakeholder Meeting – UWRWA Technical Committee  
Cool Creek Watershed Management Plan Update  
November 2, 2005

## Water Quality Benchmarks (Volunteer Monitoring – Biological Data)



Stakeholder Meeting – UWRWA Technical Committee  
Cool Creek Watershed Management Plan Update  
November 2, 2005

## Problem Statements and Goals

- Key Problems
  - Streambank Erosion
  - Sedimentation
  - Elevated nutrients in wet weather runoff
  - Bacteria (now listed as non-supportive for primary contact on 305(b) report, on 303(d) list for E.Coli)
  - Flooding problems
  - Loss of Ecological Diversity in Riparian Areas

Stakeholder Meeting – UWRWA Technical Committee  
Cool Creek Watershed Management Plan Update  
November 2, 2005

## Goals and Implementation Measures

- 1. Reduce impact of urbanization by modifying stormwater detention policy to control smaller storms and treat the first flush of runoff
  - Updating of ordinances and design standards (currently underway)
- 2. Implement consistent floodplain development restrictions by adopting necessary legal authority
  - County has restrictive floodplain ordinance, Carmel and Westfield are considering
- 3. Develop comprehensive erosion and sediment control program in Carmel and Westfield (ordinance, plan review, inspection, enforcement)
  - All three entities currently developing programs, will be responsible on January 1, 2006

Stakeholder Meeting – UWRWA Technical Committee  
Cool Creek Watershed Management Plan Update  
November 2, 2005

## Goals and Implementation Measures

- 4. Provide public education and outreach to residents and business in Cool Creek Watershed to promote good watershed behavior (disposal of pet waste, proper lawn chemical use, illicit discharges, etc.)
  - All three entities are already doing as part of Rule 13
- 5. Construct the bridge and culvert conveyance improvement projects to reduce flood hazards and protection public safety
  - Being implemented as funds allow
- 6. Continue program (CEES, Cool Creek Park) to remove invasive species and protect ecological diversity in forested areas
  - Recent Service Learning Project, Hamilton County will continue to support CEES in this activity



Stakeholder Meeting – UWRWA Technical Committee  
Cool Creek Watershed Management Plan Update  
November 2, 2005

## Goals and Implementation Measures

- 7. Implement the Oak Manor Regional Stormwater Quality Facility to reduce downstream channel erosion and reduce non-point source pollutant levels (nutrients, metals, bacteria)
  - Project currently in design, have applied for Section 319 Implementation Grant
- 8. Repair/restore severe channel erosion in the lower reaches of Cool Creek to improve aquatic habitat, reduce sedimentation, and protect public and private facilities
  - Demonstration project in Cool Creek Park, target additional high priority areas, promote SWCD cost share programs
- 9. Provide additional agricultural BMPs in the upper watershed to reduce downstream sediment and nutrient loads



Stakeholder Meeting – UWRWA Technical Committee  
Cool Creek Watershed Management Plan Update  
November 2, 2005

## Goals and Implementation Measures

- 10. Improve the riparian habitat in the upper watershed by establishing stream buffers and vegetation as agricultural areas are developed
  - Consider buffer ordinance, work with developers to establish additional stream side vegetation
- 11. Provide sanitary sewer service to the limited neighborhood areas in Westfield still on septic systems
  - Five neighborhoods in Westfield, have plans to sewer areas as funds allow



Stakeholder Meeting – UWRWA Technical Committee  
Cool Creek Watershed Management Plan Update  
November 2, 2005

## Regional Water Quality Facilities

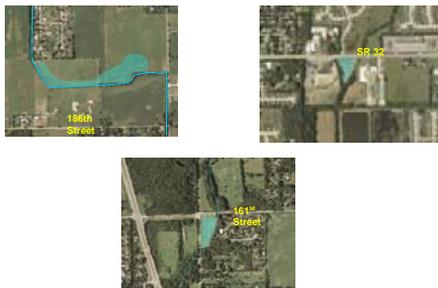


Oak Manor Stormwater Quality Facility



Stakeholder Meeting – UWRWA Technical Committee  
Cool Creek Watershed Management Plan Update  
November 2, 2005

## Regional Water Quality Facilities



Stakeholder Meeting – UWRWA Technical Committee  
Cool Creek Watershed Management Plan Update  
November 2, 2005

## High Priority Streambank Erosion Areas



Stakeholder Meeting – UWRWA Technical Committee  
Cool Creek Watershed Management Plan Update  
November 2, 2005

## Input, Feedback, Questions?



*Preserve and improve the overall health of the Cool Creek watershed by addressing existing stormwater quantity and quality concerns and by proactively guiding future stormwater management practices and decisions.*



Stakeholder Meeting – UWRWA Technical Committee  
Cool Creek Watershed Management Plan Update  
November 2, 2015

# **STAKEHOLDER MEETING 4**



# **AGENDA**

**Stakeholders Committee Meeting  
Cool Creek Watershed Management Plan  
Hamilton County, Indiana**

**November 30, 2005 – 10:00 a.m.**

**Conference Room 1-A  
Hamilton County Government & Judicial Center**

---

1. Introductions and Sign-in
2. Summary of Input Obtained at UWRWA Technical Committee Meeting (11-02-05)
3. Review/Discuss Stakeholder Questions/Comments on “November 2005 Draft Section 319 Updates to the Cool Creek Watershed Management Plan” (i.e. Chapter 9.0 of the plan)
4. Review IDEM Comments on Draft Chapter 9.0 (and other elements of the plan)
5. Closing and Follow Up Action Items

## STAKEHOLDER MEETING SUMMARY

**Project:** Cool Creek Watershed Management Plan  
**Date:** November 30, 2005  
**Time:** 10:00 a.m.  
**Location:** Hamilton County Surveyor's Office  
**Attendees:** Bob Thompson – Hamilton County Surveyor's Office  
Hans Peterson – Clark Dietz  
Sam Robertson – Clark Dietz  
Sky Schelle – IDEM  
Bonny Elifritz – IDEM  
Amanda Foley – City of Carmel  
Amanda Smith – Hamilton County Parks & Recreation Dept.  
Summer O'Brien – Williams Creek Consulting

---

On November 30<sup>th</sup>, 2005, a Stakeholder meeting was held at the Hamilton County Surveyor's Office. Hans Peterson went through the following agenda during the meeting:

- Introductions and Sign-in
- Summary of Input Obtained at UWRWA Technical Committee Meeting (11-02-05)
- Review/Discuss Stakeholder Questions/Comments on "November 2005 Draft Section 319 Updates to the Cool Creek Watershed Management Plan" (i.e. Chapter 9.0 of the plan)
- Review IDEM Comments on Draft Chapter 9.0 (and other elements of the plan)
- Closing and Follow Up Action Items

The following discussion/feedback is organized by agenda item.

### **Summary of UWRWA Technical Committee Meeting (11-02-05)**

After introductions and sign-ins Hans Peterson went over the UWRWA Technical Committee Meeting held on November 5<sup>th</sup>, 2005. Some of the feedback obtained from the UWRWA included:

- Newspaper articles – we noted that we've had mixed success in getting newspaper articles published. Our article on the pilot stream bank restoration project in Cool Creek Park (by the Hamilton County SWCD) was not published. Bill Savage, with the City of Elwood, said that they had similar

## **Meeting Minutes**

Cool Creek Watershed Management Plan

11-30-05

Page 2

problems in getting the newspaper to publish news releases about their Little Duck Creek/Lilly Creek watershed project.

- Questions were asked regarding maintenance responsibilities for the proposed regional stormwater quality facilities, such as the proposed Oak Manor facility. Ideally, the County would like to have the parks department handle maintenance rather than a homeowners association.
- Septic systems were discussed. One of the stakeholders noted that CSO communities can take credit for eliminating septic systems in neighborhoods by providing sanitary sewers. Fortunately, there are only a few small neighborhoods in Westfield that are still on septic systems. Westfield has plans to service these areas with sanitary sewers.
- Mr. Peterson noted full meeting minutes would be available in the final 319 quarterly report.

### **Review/Discuss Stakeholder Questions/Comments on Draft Cool Creek Watershed Management Plan (i.e. Chapter 9.0 of the plan)**

- Mr. Peterson said Kent Ward (Hamilton County Surveyor) had reviewed the report and his main comments were focused on future stream buffers. He would prefer limiting them to grass buffer strips in regulated drains in order to minimize the amount of maintenance required.
- Ms. Smith noted the Red Shouldered Hawk, mentioned in section 9.2.4, has been spotted recently in Cool Creek Park (the report reference indicates that observations may be 13 to 45 years old). She also noted that she has not seen the American Badger in the park, but it may be found in other parts of the watershed.
- Ms. Smith provided a Field Checklist for the Birds of Cool Creek Park pamphlet that is provided to visitors of Cool Creek Park. The pamphlet lists birds that have been spotted in the park. She noted that many of these birds are rare, endangered, or threatened.
- Ms. Smith noted that IDNR usually wants birds to nest in an area before they are listed as being observed in an area. She noted they have observed the Black and White Warbler nesting in the area.
- Ms. Smith mentioned that she could provide more detailed information concerning section 9.2.3 and more specifically the native vegetation and habitat in the area.

## **Meeting Minutes**

Cool Creek Watershed Management Plan

11-30-05

Page 3

- Ms. Smith indicated that the parks department has had their application approved by IDNR for the “Adopt-A-River” program. The Parks Department has adopted Cool Creek within Cool Creek Park. A sign will be placed on U.S. 31 at the Cool Creek crossing. Mr. Thompson said they might want to consider adding report a polluter telephone numbers on these signs.
- Ms. Smith also noted that the CEES quote on page 9-15 came from Hamilton County Parks and Recreation Department and that the County has been the lead agency in the program to remove invasive species in the Cool Creek Watershed. Ms. Smith can provide more information regarding this program that can be added to Goal #6 in Chapter 9. The Parks Department typically has 2 to 4 service days per year.
- Ms. Smith said that the pilot stream bank erosion control project in Cool Creek Park may be useful to be included in the plan. She stated that signage is supposed to be added to this area along the creek to educate the public of the project.
- Ms. Smith mentioned that the Hamilton County Parks and Recreation Department is always looking for land to expand the park system. Currently they are attempting to purchase land adjacent to the park at 151<sup>st</sup> Street & Oak Road.
- Ms. O’Brien stated they have been working with a developer to construct a wetland facility at 161<sup>st</sup> Street and Westfield Blvd. The facility is mitigation for a nearby development that involved filling of an existing wetland. She stated the pond is approximately 2 acres. Construction will probably start this spring. Ms. O’Brien said she would provide Mr. Peterson with more information.

### **Review IDEM Comments on Draft Chapter 9.0**

Mr. Schelle and Mr. Peterson went over IDEM comments on the 319 Update to the Cool Creek Watershed Management Plan (Chapter 9.0). Discussion by the group was added. Topics were generally address focusing on issues additional discussion would benefit. The following items were discussed:

- Figure 3-1 should be able to be modified as requested. Mr. Peterson said Clark Dietz would try to hatch the problem areas in order to make them show up better on black and white copies. Mr. Thompson said the figure would be available on the Hamilton County’s website. Mr. Peterson confirmed that all copies produced by Clark Dietz would be color copies.

## Meeting Minutes

Cool Creek Watershed Management Plan

11-30-05

Page 4

- The land use calculations were estimates from aerial photos. A land use map was not created. However, Carmel and Westfield have some land use mapping that we could put in an appendix to Chapter 9.
- Even though E. Coli has not been listed as a stakeholder concern, it has been discussed at public and stakeholder meetings. Mr. Thompson provided a summary of a stormwater quality awareness questionnaire that Hamilton County distributed as part of their Rule 13 program. One of the questions noted bacteria as being a pollutant of concern.
- It was noted that high metal levels were mentioned early in the report and not fully addressed later in the report. This possibly could be from a point source and should be reviewed again and addressed in Chapter 9.
- In general pollutants of concern (TSS, nutrients, and bacteria) should have existing load calculations. Implementation measures should have load reduction calculations.
- The nutrient critical area section should have more detail. If point sources have not been identified, potentially sources should be pointed out (i.e. golf courses, non-buffered areas, nurseries).
- Mr. Thompson noted that all areas within Cool Creek are in MS4 communities, therefore are required to follow Rule 13 guidelines. This includes public education which overlaps many items in the watershed management plan checklist.
- If agricultural land is diminishing in the watershed why focus on additional agricultural BMPs? Preserving buffer areas around the streams is more of a development issue. As this land is developed it would be desirable that buffer areas be provided along the streams. This may be accomplished through no construction in the floodplain ordinances. Goal #9 and #10 may need to be reworked to emphasize education of developers as agricultural land is developed.
- In general section 9.6 should have more detail about how the plan would be measured in the future. This would detail water quality monitoring procedures in the future. Hamilton County Parks and Recreation Department are planning on assisting individuals who would like to help with sampling of Cool Creek by providing equipment needed for sampling. These individuals have to be trained on sampling procedures. Ms. Elifritz mentioned that this section is not just for measuring by sampling of water quality but can also include other programmatic measures.

**Meeting Minutes**

Cool Creek Watershed Management Plan

11-30-05

Page 5

- Mr. Peterson said a revised copy of the draft report should be available by the end of next week.
- Copies of the report will be needed for IDEM, Hamilton County, Carmel, Westfield, Cool Creek Park, and the SWCD. Mr. Thompson noted a final copy would be put on the Hamilton County website.

P:\H21013\Meetings\Stakeholder Meeting #4 Minutes 11-30-05.doc