APPENDIX H

ADDITIONAL 319 UPDATE INFORMATION

APPENDIX H.1

PUBLIC MEETING EXHIBITS

PUBLIC MEETING 1

HAMILTON COUNTY DRAINAGE BOARD, CITY of CARMEL and the TOWN of WESTFIELD

SIGN-IN SHEET FOR COOL CREEK WATERSHED STUDY

Location: Cool Creek Nature Center Auditorium, 2000 E. 151st Street, Carmel, In

Consultant: Clark-Dietz, Inc. **Presenters:** Hans Peterson, P.E.

Date: 4/13/2005 **Start Time:** 7:00 PM **End Time:**

	FIRST NAME (Please print)	LAST NAME (Please print)	ADDRESS (Please print)	PHONE #	EMAIL (Please print)
1.	CARRIE	COUGHLIN	TOWN OF WESTFIELD	896-5577	ccoughlin@westfieldtownship
2.	Ted	Engelbrecht	522 Wind Skip Circle Westfield	875-9295	[illegible]@hotmail.com
3.	PAUL & AUDREY	Woodward	9311 E. 221st St. Cicero	984-8135	
4.	Jerry & Carol	Rulon	9990 E 256 St Cicero	984-3902	
5.	Sarah	Baxter	919 N East St Indy 46202	317-450-7245	sbaxter@williams creek.
6.	KURT	WANNINGER	TOWN OF WESTFIELD	896-5452	
7.	Amanda	Foley	City of Carmel	571-2441	
8.	Benbury	Carstensen	10826 E 166th St Noblesville	770-9075	
9.	Eric	Carstensen	10826 E 166th St Noblesville	770-9075	
10.	Jo	Mead	15466 Oak Rd Carmel	846-6257	MICHEL02@aol.
11.	BOB	Thompson			
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					

PUBLIC MEETING SUMMARY

Project:	Cool Creek Watershed Management Plan
Date:	April 13, 2005
Time:	7:00 p.m.
Location:	Cool Creek Nature Center Auditorium 2000 E. 151st Street, Carmel, In
Staff Attendees:	Bob Thompson – Hamilton County Hans Peterson – Clark Dietz Sam Robertson – Clark Dietz

A public information meeting was held to introduce the update of the Cool Creek Watershed Management Plan. Approximately 13 people attended the meeting. A list of attendees who signed in is attached to this meeting summary. The following is a summary of the meeting and follow up question and answer period.

Bob Thompson kicked off the meeting by introducing the project and the consultant preparing the management plan, Clark Dietz.

Hans Peterson gave a presentation covering the Cool Creek Watershed Study including summary of the findings, alternatives, and recommended solutions. Following the presentation the floor was opened to questions and/or comments from the public. The following were the general questions and answers:

- Is Cool Creek an impaired Stream?
  Yes, it is on the latest IDEM 303(d) list of impaired streams, with E. coli being the parameter of concern.

- What contaminants were found during sampling?
  Somewhat high levels of nutrients (nitrogen and phosphorus) were found for the spring storm that was sampled. Potential sources include residential and/or agricultural fertilizers. Higher levels were found in the upper watershed sampling location, which may point to agricultural sources. E. coli was also found to be above full body contact limits (235 cfu/100 ml).

- Are the contaminants due to Golf Courses? How many golf courses are there in the watershed?
  High levels of containments were found upstream of the only golf course in the watershed.

- Is there funding set aside to clean up damage along the stream due to ice storms?
  Currently there is no funding set aside for this type of damage, unless the damage was in a stream reach that is on a regulated drain maintenance fund.

- Is Cool Creek on a County regulated maintenance fund?
  The main channel of Cool Creek is not currently on a regulated drain maintenance fund. Some of the smaller tributary drains may be on a fund. It was noted that residents can petition the County to have a drain place on a maintenance fund.

- Where is money coming from for the project?
  Funding for projects will be a challenge and will have to be a combination of funds. Grants and regulated drain funds were mentioned. The current upgrade of the Cool Creek Plan is being funded under a Section 319 Grant administered by IDEM. It may be feasible to obtain Section 319 grants for some implementation projects as well. Stormwater fees are also being considered by many communities in Indiana, particularly as a result of increased emphasis on stormwater quality (Phase II NPDES requirements). The County is also looking to coordinate with developers to help share costs of stormwater BMPs.

- How Many watersheds are in Hamilton County?
  It was estimated that are perhaps a dozen watersheds the size of Cool Creek in Hamilton County. Watersheds can be divided into sub-watersheds, so it is difficult to identify a specific number.

- Will willow trees take over the channel eventually if not controlled?
  Recommendations for stream bank stabilization will require selective plant species to avoid the problem that can occur when willow trees become invasive.

- Invasive species such as Honey Suckle are very damaging. Is there any chance for an "adopt a stream" program to help remove some of these species along stream reaches? *This was generally thought to be a good idea and perhaps the County could work with local citizens in this effort.*

- What is being done to address the beaver problem?
  If the beaver problem is located in a regulated drain, Hamilton County has a trapper under contract to remove the beavers.

- How closely are you working with the Soil and Water Conservation?
  Hamilton County is working closely with the SWCD which is an organization of Hamilton County. SWDC was the organization responsible for the pilot stream bank stabilization project completed in Cool Creek Park.

- Is INDOT working with IDNR on the S.R. 31 improvements to included some type of wetland plants instead of the usually grass plantings?
  INDOT is now a Phase II stormwater permittee and as such, they are now required to consider stormwater quality impacts in the project planning and construction.

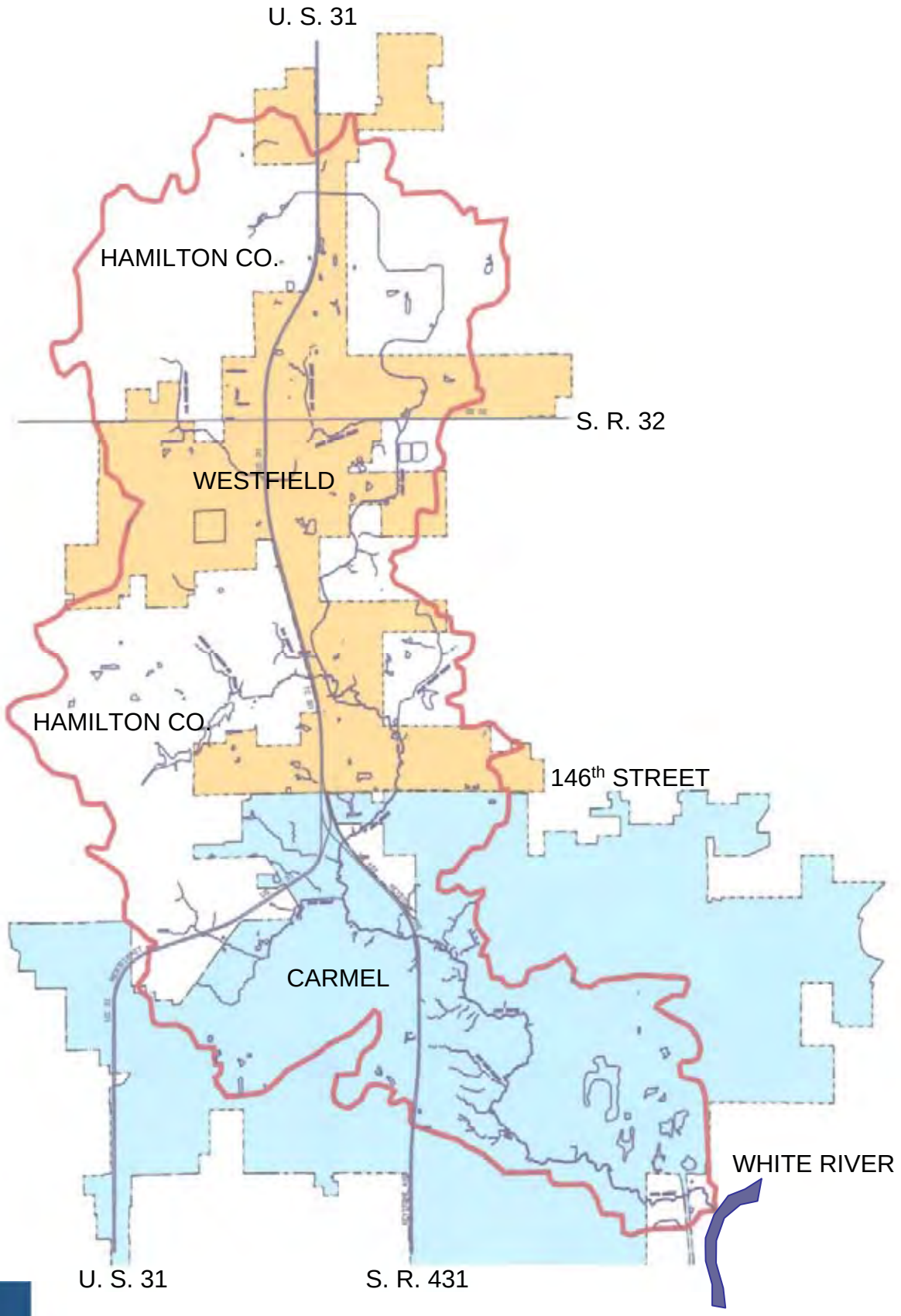
- Is there a way wetlands can be used as retention?
  Yes the county is currently looking at regional dentition ponds that act as retention and have wetland incorporated.

- Do lakes such as Morris Reservoir improve water quality and has there been testing upstream and downstream of reservoirs to determine this?
  In general lakes improve water quality by providing quiescent settling conditions. The Morse Reservoir may have been recently sampled because it is a reservoir used to supply source water for drinking water. It was mentioned that Dr. Tedesco of IUPUI Center for Earth and Environmental Science is involved in a water quality research partnership with US Filter Indianapolis Water to evaluate nutrients in three reservoirs (including Morse Reservoir).

- Are there old wetland areas that have been drained for agricultural use that can be turned back into wetlands?
  Recently several farm field drains (in the northern part of the County) have failed and the fields have reverted into wetlands.

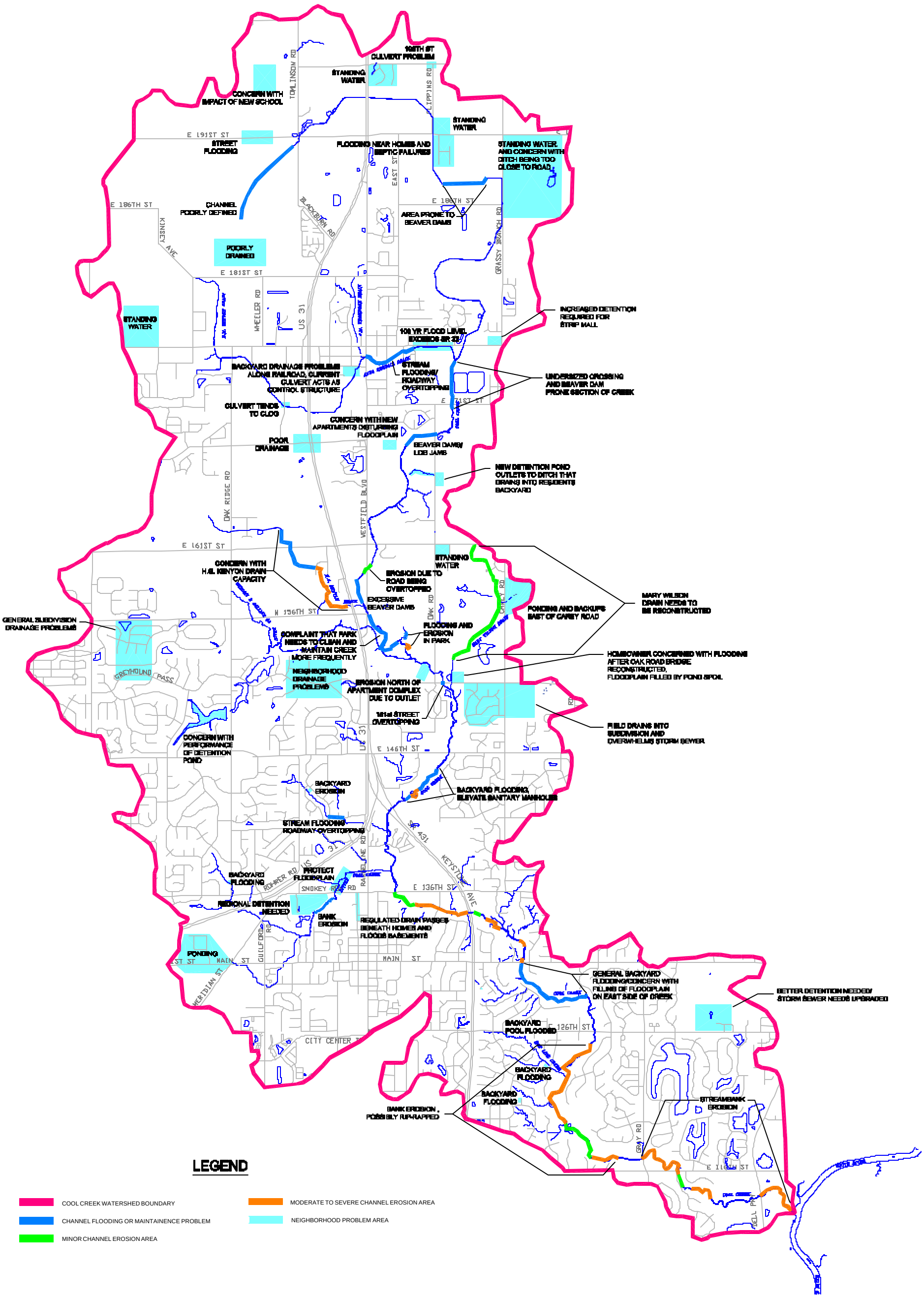
Two stations with watershed maps were setup and occupied by project personnel to discuss individual problems, concerns, or questions. Several individual concerns were recorded. Of particular note was a suggestion by a citizen (Ted Engelbrecht) identifying a the southeast corner of 161st Street and Westfield Boulevard (north of Cool Creek Park). This site is apparently owned by the Town of Westfield and could be a good location for a constructed wetland. He also mentioned it may be possible to locate BMPs at the Washington Elementary School west of Grassy Branch Road.

Cool Creek Watershed



Clark Dietz

COOL CREEK WATERSHED

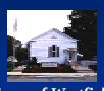


COOL CREEK WATERSHED MANAGEMENT PLAN

FIGURE 3-1
PROBLEM AREA MAP

Cool Creek Watershed Management Plan

City of Carmel



Town of Westfield

Hamilton County

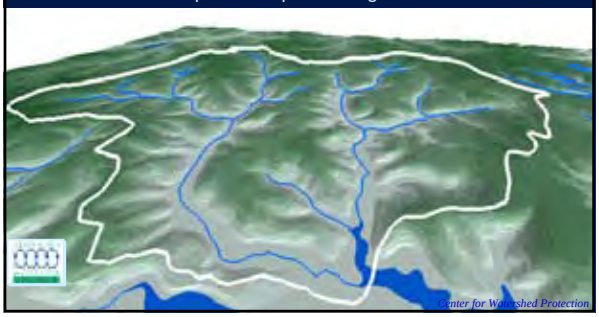
Public Meeting
Section 319 Grant
April 13, 2005

Agenda

- Cool Creek Watershed Overview
- Previous Cool Creek Planning Efforts
- Public Input
  - Questions
  - Specific Problem Areas
  - Overall Watershed Concerns
  - Priorities
- Closing / Follow Up

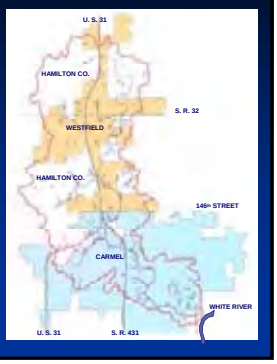
What is a Watershed?

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



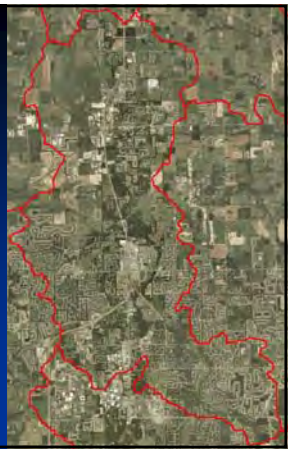
Cool Creek Watershed Overview

- 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



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

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

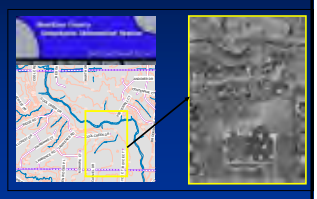
Scope of the Previous Study

- 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



http://www.co.hamilton.in.us/gis/start.html

Inventory & Problem Identification

Previous Reports & Studies

- IDNR Memorandum – Grassy Branch
- Hydraulic Report for Village Farms Wilfong
- Countryside Overall System Drainage Report
- Soil Survey of Hamilton County, Indiana
- FEMA Flood Insurance Study
- 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

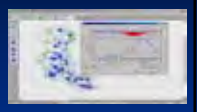
Problem Analysis

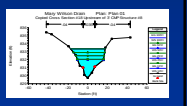
- Water Quantity Evaluation
  - Hydrologic/hydraulic modeling
  - Impacts of future development
- Water Quality Evaluation
  - Sampling
  - Existing conditions
  - Policies impacting future conditions

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

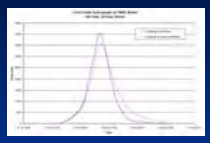




Problem Analysis

Effects of Urbanization

- Higher peak flows as a result of urbanization
- County detention policy is effective in controlling peak flows
- Longer flow durations
- More frequent "bank-full" conditions tend to exacerbate erosion

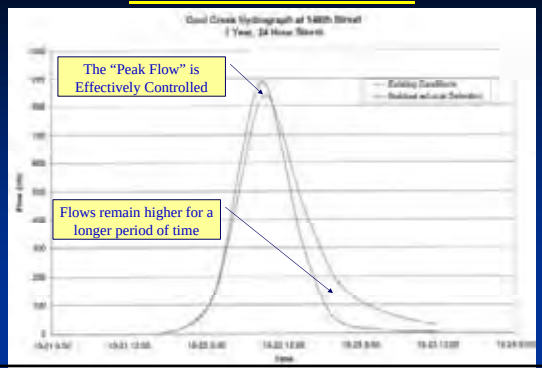


Cool Creek Upstream of White River confluence

Cool Creek Upstream of 116th Street in Golf Course

Problem Analysis

Effects of Urbanization



Problem Analysis

Hydraulic Evaluation

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

Examples

Inadequate bridge – 171st St. over Cool Creek

Culverts filled with sediment - Walter Street and Walter Court

Inadequate culverts – Carmel Drive over Hot Lick Creek

Problem Analysis

Stream Channel Evaluation

Severe erosion along lower reach of Cool Creek

Stream Information Compiled on Inventory Maps

Floodplain encroachments constrict 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

Forested Riparian Buffer along Cool Creek East of S. R. 431

No Riparian Buffer – Cool Creek South of 191st Street

Problem Analysis

Floodplain Development

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

Problem Analysis

Water Quality Sampling Locations

- **186th Street**
- **146th Street**
- **116th Street**

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**
  Improve water quality

Recommendations

Cost of Improvements

Stream Flooding/ Roadway Overtopping Solutions -	$2,720,000
Neighborhood Solutions -	$100,000
Streambank Erosion Solutions -	$570,000
Regional Detention Solutions -	$5,100,000
Total of All Solutions -	**$8,490,000**

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, priorities (this project – Section 319)*

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 171st Street Bridge and Regrade Roadway
- Regrade Roadway at 151st 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 Walter Street and Walter Court Culverts (Highway Run)
- Replace Private Drive Culvert between Walter Street and Walter Court (Highway Run)
- Replace Thornberry Drive Culvert (Highway Run)

Solution Development

Neighborhood Problem Solutions

- Replace Carmel Drive Culvert (Hot Lick Creek)

Solution Development

Streambank Erosion Solutions

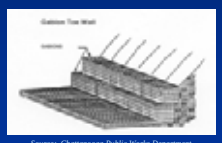
Restoration Projects at:

- Highway Run –
  - Downstream of Stonehedge Drive
- H.G. Kenyon Drain –
  - 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 of 131st Street (Main Street) and
  - Upstream of Keystone Avenue

Streambank Stabilization Techniques

Riprap and Live Stakes (Joint Plantings)
Source: Federal Interagency Stream Restoration Working Group, 1998

Brushmattress Technique (Source: USDA-NRCS 1996)



Source: Chattanooga Public Works Department

Streambank Stabilization Techniques

Riprap and Live Stakes (Joint Plantings)
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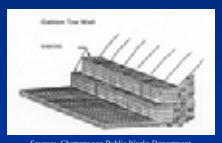

Source: Chattanooga Public Works Department

Cool Creek Demonstration Project (Hamilton County SWCD)

Cool Creek Demonstration Project (Hamilton County SWCD)

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 171st 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

HAMILTON COUNTY SURVEYOR'S OFFICE

One Hamilton County Square, Suite 188
Noblesville, Indiana 46060
Phone (317) 776-8495
Fax (317) 776-9628

Press Release

Contact: Robert Thompson, RLA
Phone: (317) 776-8495

FOR IMMEDIATE RELEASE

HAMILTON COUNTY PARKS TO HOST COOL CREEK WATERSHED PUBLIC MEETING

The Hamilton County Surveyor's Office invites the public to participate in a meeting to discuss stormwater management issues in the Cool Creek Watershed. On April 13th a public meeting will be held at 7 PM in the Cool Creek Nature Center Auditorium, 2000 E. 151st Street in Carmel.

On January 1st, the Surveyor's Office obtained a Section 319 Watershed grant to work with Clark Dietz, a local environmental firm, to identify stormwater pollution reduction strategies in the Cool Creek Watershed. To help us develop the watershed management plan, we would like feedback from the community on key issues identified in the original Cool Creek Study plan as well as additional concerns that may not have been identified. Key areas of interest include:

- Existing stormwater problems in the watershed (Stream bank erosion, flooding, etc.)
- The effect of urbanization on water quality (Cool Creek is on the State's list of impaired water bodies)
- Best Management Practices (ways to reduce stormwater pollution)

Hamilton County believe that the residents of the Cool Creek Watershed play a critical role in improving water quality in the watershed and that public input is vital in developing a watershed management plan. For further information contact:

Robert Thompson, Program Manager, Hamilton County Surveyors Office
E-mail: RCT@co.hamilton.in.us
Telephone: (317)776-8495
Fax: (317)776-9628

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News and Announcements:

News:

:: The Treasurer's Office has Extended Hours for the Spring Tax Collection (4/8/2005)

:: New Online Service available! Report-a-Polluter (4/7/2005)

:: Cool Creek Watershed Public Meeting (3/29/2005)

:: New Food Regulations Available for 2004-5 (12/27/2004)

:: Surveyor's Office - New Form Requirements (12/27/2004)

:: 2004 Election Results (11/3/2004)

Announcements:

:: Public Notices

:: Employment Opportunities

:: Bids and RFPs

:: Construction Related Travel Advisories

:: Weather Related Travel Advisories

Meetings and Events:

Meetings & Events:

Hamilton County Board of Zoning Appeals Meeting (4/19/2005)

Community Corrections Board Meeting (4/21/2005)

Commissioner's Meeting (4/25/2005)

Drainage Board Meeting (4/25/2005)

Solid Waste Board (4/25/2005)

Parks & Recreation Calendar

April 2005

Su	Mo	Tu	We	Th	Fr	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

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Parks Directory

Phone & Address Directory

Services and Programs Directory

Department Directory

Online Services:

Online Forms

Online Maps

Online Ordinances

Online Property/Tax Reports

Online Registered Voter Information

Online Requests for Services

Online Food Facility Inspections

Areas of Interest:

Current Legislation

History, Demographics, Community

Citizen Issues

Permits, Inspections & Business Issu

Visitor and Lodging Info.

Other Sites:

Community Calendar (HC Conventio Visitors Bureau)

Homeland Security Threat Advisory

USGS Flood Watch

Site Survey

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Town of Westfield Department of Public Works - Microsoft Internet Explorer

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http://www.westfield.org/PressRelease.asp

Westfield Public Works Department

2730 E. 171st Street
Westfield, IN 46074
317-867-5110

HAMILTON COUNTY SURVEYOR'S OFFICE

One Hamilton County Square, Suite 188
Noblesville, Indiana 46060
Phone (317) 776-8455
Fax (317) 776-9628

Press Release

CONTACT: Robert Thompson, RLA FOR IMMEDIATE RELEASE
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Hamilton County believes that the residents of the Cool Creek Watershed, which include the Carmel, Westfield and Unincorporated communities of Hamilton County, play a critical role in improving water quality in the watershed and that public input is vital in developing a watershed management plan. For further information contact

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Watershed Management Section

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Office of Water Quality

319 Grant Program

205(j) Grant Program

104(b)(3) Grant Program

Nonpoint Source Plan

WM Information

WM Staff

NEW! - Section 205(j) Solicitation for Proposals for FFY 2005 - NEW!

NEW! - Hamilton County Parks to host Cool Creek watershed public meeting. - NEW!

The Watershed Management Section administers the Clean Water Act Section 104(b)(3), 205(j), and 319 programs which provide federal funding for watershed planning, water quality management planning, NPDES

PUBLIC MEETING 2

SIGN IN SHEET

Cool Creek Public Meeting

Cool Creek Watershed Management Plan
Hamilton County, Indiana

December 14th, 2005
7:00 p.m.

Name	Organization	Address	E-mail	In-Kind Travel Time
Sam Robertson	Clark Dietz	9000 Keystone Crossing, Suite 350	samuelr@clark-dietz.com	
Hans Peterson	Clark Dietz	9000 Keystone Crossing, Ste 350	hansp@clark-dietz.com	
[illegible]	HCSC	1 Hamilton County Sq	[illegible]	
Amanda [illegible]	HCPR	2001 E. 191st St.	ads@[illegible]	
Amanda Foley	Carmel Eng.	One Civic Square Carmel	afoley@carmel.in.gov	
Carrie Cason	WESTFIELD	130 Penn Street	ccason@WESTFIELD.IN.GOV	
Sky Schelle	IDEM	100 N. Senate Ave	sschelle@[illegible]	

PUBLIC MEETING SUMMARY

Project:	Cool Creek Watershed Management Plan
Date:	December 14th, 2005
Time:	7:00 a.m.
Location:	Cool Creek Nature Center
Attendees:	Bob Thompson – Hamilton County Surveyor's Office
	Hans Peterson – Clark Dietz
	Sam Robertson – Clark Dietz
	Sky Schelle – IDEM
	Amanda Foley – City of Carmel
	Amanda Smith – Hamilton County Parks & Recreation Dept.
	Carrie Cason – Town of Westfield

On December 14th, 2005, a public meeting was held at the Cool Creek Park Nature Center to present to the public the final Cool Creek Watershed Management Plan. A list of the attendees is attached to this summary. Attendees included project stakeholders only. No public participants came to the meeting and the presentation was not given since the project stakeholders had previously seen the presentation materials. Mr. Thompson would have the presentation put on the County's website and also see if Carmel and Westfield could do the same.

Cool Creek Watershed Management Plan

Public Meeting

Cool Creek Nature Center

December 14, 2005

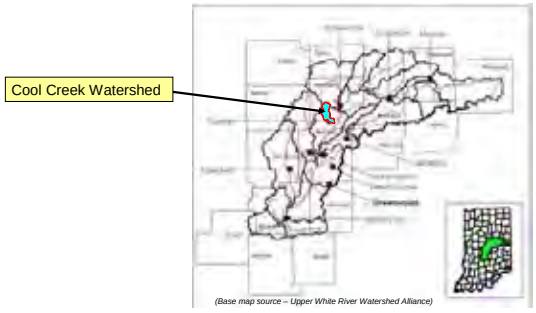
Agenda

- Cool Creek Watershed Overview
- IDEM Section 319 Grant Requirements
- Recent Watershed Activities
- Section 319 Updates to the Cool Creek Plan
- Summary, What's Next
- Input/Feedback/Questions

Project Overview

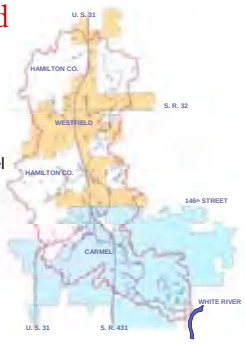
- Section 319 Grant
  - Section 319(h) of Clean Water Act provides funding for projects that reduce nonpoint source water pollution
  - Cool Creek 319 Grant - January 1, 2005 to December 31, 2005
- Grant Contract Tasks
  - Produce a Watershed Management Plan (Update to November 2003 Plan)
  - Stakeholder Committee Meetings (4)
  - Interviews (Hamilton County, Westfield, Carmel)
  - Public Meetings (2)
  - Newspaper Articles (4)

Cool Creek Watershed



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



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 %

Recent Watershed Activities

April 2005 *September 2005*

Streambank Restoration – Cool Creek Park
by Hamilton County SWCD

Recent Watershed Activities

April 2005 *September 2005*

Streambank Restoration – Cool Creek Park
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Recent Watershed Activities

April 2005 *September 2005*

Streambank Restoration – Cool Creek Park
by Hamilton County SWCD

Recent Watershed Activities

Center for Earth and Environmental Science
Indiana University - Purdue University, Indianapolis

Cool Creek Park

- Removal of Invasive Species in Cool Creek Park
  - Brush Honeysuckle
  - Garlic Mustard Plant
- On-Going Program by Hamilton County Parks and Recreation Department

Recent Watershed Activities

Recent Watershed Activities


Noblesville Daily Times

One of the Nation's Fastest-Growing Daily Newspapers

Cool Creek polluted

By Jack Harper | Editor

WESTFIELD — Rainwater mixed with crop 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 Sweet, a public information officer at the Indiana Department of Natural Resources, water laden with ammonium nitrate flowed into a storm sewer outlet at Wallt Elevator, located at 131 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," Sweet said Thursday afternoon.

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

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

Public Meeting
Cool Creek Watershed Management Plan Update
December 14, 2005

Cool Creek Watershed Management Plan Updates

- Adding New Chapter 9.0 to address Section 319 requirements
- Keeps the integrity/history of the original 2003 document
- Final report will be available on Hamilton County Surveyor's website (hard copies will also be available)

Public Meeting
Cool Creek Watershed Management Plan Update
December 14, 2005

Chapter 9.0 Contents

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

Public Meeting
Cool Creek Watershed Management Plan Update
December 14, 2005

Water Quality Benchmarks

- Utilized sampling data from 2003 Cool Creek Plan
  - 2002
- IDEM Assessment Branch Data
  - 1992, 1996, and 2001
- Volunteer Monitoring (Hoosier River Watch)
  - 2001, 2002, 2004, 2005

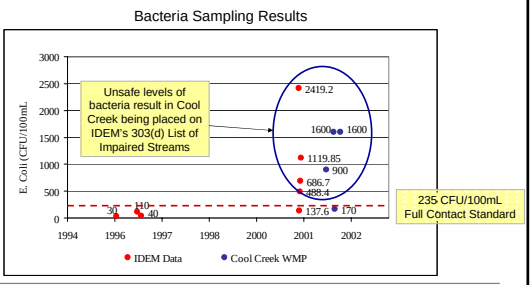
Public Meeting
Cool Creek Watershed Management Plan Update
December 14, 2005

Water Quality Benchmarks (2003 Cool Creek Plan)

Parameter		Typical Wet Weather Values Reported in Literature	116th Street Crossing				146th Street Crossing				186th Street Crossing			
			Dry Weather		Wet Weather		Dry Weather		Wet Weather		Dry Weather		Wet Weather	
			06/21/02	09/09/02	03/25/02	06/18/02	06/21/02	09/09/02	03/25/02	06/18/02	06/21/02	09/09/02	03/25/02	06/18/02
BOD	mg/L	12 [1]	<5	<5	6.1	5.5	<5	<5	5	6.6	<5	<5	5	5.4
COD	mg/L	91 [1]	<10	<10	10	69	<10	9.8	10	81	<10	11	10	30
Nitrogen, Kjeldahl	mg/L	2.36 [1]	0.55	0.3	2.3	3.0	0.84	0.54	2.1	3.6	0.70	0.69	1.3	2.1
Nitrogen, Nitrate	mg/L	0.96 [1]	0.85	0.47	0.9	0.69	0.85	0.18	1.2	0.65	1.8	0.65	0.8	1.3
Nitrogen, Ammonia	mg/L	0.26 - 1.1 [2]	<0.10	<0.10	0.68	0.14	<0.10	<0.10	5.1	0.16	<0.10	<0.10	0.3	0.29
Nitrogen, Total	mg/L	2.31 [1]	1.2	0.77	3.2	3.7	1.7	0.7	3.3	4.4	2.5	1.3	2.1	3.3
Nitrogen, Organic	mg/L	1.25 [1]	0.56	0.3	1.4	2.9	0.84	0.49	<0.10	3.4	0.73	0.56	<0.10	1.8
Phosphorus, Dissolved	mg/L	0.18 [1]	<0.05	<0.05	<0.05	0.15	<0.05	<0.05	<0.05	0.23	0.067	0.07	<0.05	0.28
Suspended Solids	mg/L	100 [1]	<5	<5	120	480	<5	<5	61	340	<5	10	11	160
Dissolved Solids	mg/L	N/R	440	520	380	320	390	430	290	240	390	460	350	140
E. coli	/100 ml	11,000 [1]	170	>1600	900	1600	220	>1600	300	1600	170	>1600	900	>1600
Fecal Streptococcus	/100 ml	35,000 [1]	13	3	120	600	12	<1	240	960	5	4	<10	1700
Chromium, Hex	mg/L	0.007 [4]	0.01	<0.01	<0.01	0.015	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.012
Phenol	mg/L	0.006 - 0.115 [5]	0.012	0.002	<0.01	0.025	<0.01	<0.01	<0.01	0.017	<0.01	<0.01	<0.01	0.018
Copper	mg/L	0.047 [1]	<0.02	<0.02	<0.02	0.033	<0.02	<0.02	<0.02	0.025	<0.02	<0.02	<0.02	<0.02
Nickel	mg/L	0.012 [1]	<0.01	<0.01	<0.01	0.018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	mg/L	0.176 [1]	<0.05	<0.05	<0.05	0.095	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Public Meeting
Cool Creek Watershed Management Plan Update
December 14, 2005

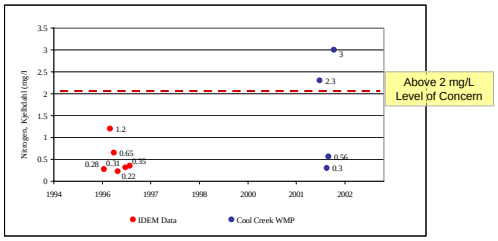
Water Quality Benchmarks (IDEM Assessment Branch Data)



Public Meeting
Cool Creek Watershed Management Plan Update
December 14, 2005

Water Quality Benchmarks (IDEM Assessment Branch Data)

Total Kjelhdahl Nitrogen Sampling Results

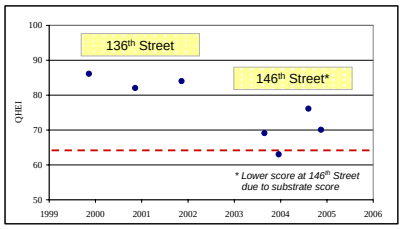


Water Quality Benchmarks (IDEM Assessment Branch Data)

- Benthic aquatic macroinvertebrate Index of Biotic Integrity (mIBI)
- Biological survey designed to quantify the quality of benthic aquatic macroinvertebrate communities
  - Sampling conducted in 1992
  - Cool Creek at 116th Street
- Interpretation
  - Fully Supporting: mIBI ≥ 4
  - Partially Supporting: mIBI < 4 and ≥ 2
  - Not Supporting: mIBI < 2
- Cool Creek Score: 4 (Fully Supporting)

Water Quality Benchmarks (Volunteer Monitoring – Habitat Data)

Qualitative Habitat Evaluation Index (QHEI) Scores

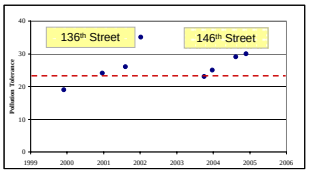


Scoring Factors
- Substrate
- In-stream cover
- Channel morphology
- Riparian zone & bank erosion
- Pool/glide and riffle/run
- Stream gradient

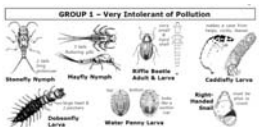
Scoring Criteria
>64 Fully Supporting
51-64 Partially Supporting
<51 Not Supporting

Water Quality Benchmarks (Volunteer Monitoring – Biological Data)

Pollution Tolerance Score



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



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

Goals and Implementation Measures

1. Develop comprehensive erosion and sediment control program in Carmel and Westfield (ordinance, plan review, inspection, enforcement)
   - All three entities (Hamilton Co., Carmel, Westfield) currently developing programs, will be responsible on January 1, 2006
2. Implement the Regional Stormwater Quality Facilities identified in the plan to reduce downstream channel erosion and reduce non-point source pollutant levels (bacteria, sediment, nutrients, metals)
   - Two sites currently under design
     - Oak Manor
     - 161st Street and Westfield Blvd.

Goals and Implementation Measures

3. 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
     - http://www.co.hamilton.in.us/services.asp?id=3921&entity=2200
     - http://www.ci.carmel.in.us/government/deptcommunityrelations3.html
     - http://www.westfield.in.gov/egov/apps/directory/list.exe?path=divs&action=47&fDD=8-47
4. 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

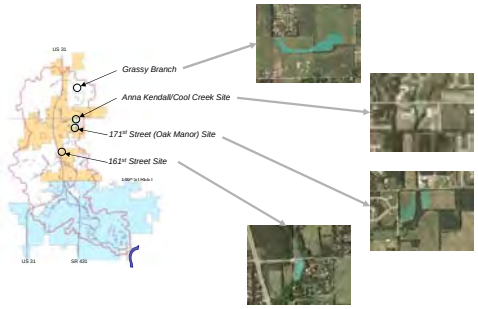
Goals and Implementation Measures

5. Reduce impact of urbanization by modifying stormwater detention policy to control smaller storms and treat the first flush of runoff
   - New design standards required January 1, 2006
6. Continue Hamilton County Parks and Recreation Department water quality and ecological enhancement programs
   - Service learning projects, invasive species removal, water quality sampling, stream clean ups, etc.
7. 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

Goals and Implementation Measures

8. Implement consistent floodplain development restrictions by adopting necessary legal authority
   - County has restrictive floodplain ordinance, Carmel and Westfield considering restrictions
9. Construct the bridge and culvert conveyance improvement projects to reduce flood hazards
   - As local funds allow, complete in conjunction with roadway projects
10. Improve riparian habitat in upper watershed by establishing stream buffers as areas are developed adjacent to Cool Creek
   - Work with developers in planning stages to incorporate stream buffers into site development plans

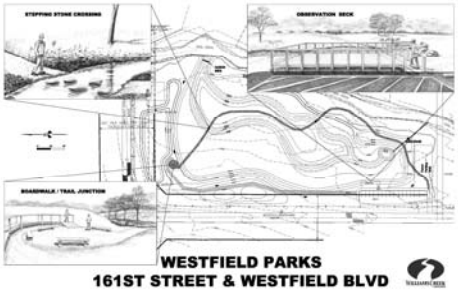
Regional Water Quality Facilities



Regional Water Quality Facilities

Oak Manor Stormwater Quality Facility

Regional Water Quality Facilities



High Priority Streambank Erosion Areas

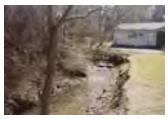
Cool Creek upstream of confluence with White River

Cool Creek upstream and downstream Hot Lick Creek

Cool Creek upstream of 131st Street

Cool Creek downstream of Gray Road

Cool Creek upstream of Keystone Avenue



H.G. Kenyon Drain downstream of Rolling Court

Summary

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.

- What's Next?
  - Begin Implementing Goals and Action Plans
  - On-Going Stakeholder Involvement
  - Explore Funding Opportunities
  - Continue Sampling and Field Observations
  - Monitor Effectiveness of Proposed Measures
  - Re-visit, Update Plan as Needed

Contact Information

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Stormwater Administrator
Department of Engineering
Carmel City Hall, first floor
One Civic Square
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Fax: 317-571-2439
E-mail: afoley@carmel.in.gov

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Input, Feedback, Questions?

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Tuesday, December 27 2005

BRIEFS

Print this Article Email this Article

News Briefs

Posted 12/14/05 - 11:23:20 am EST

Meeting on Cool Creek watershed set

The Hamilton County Surveyor's Office invites the public to attend a meeting to discuss findings and provide additional feedback on the Cool Creek watershed management plan at 7 p.m. tonight in the Cool Creek Nature Center Auditorium, 2000 E. 151st Street in Westfield.

Topics of discussion include existing stormwater problems in the watershed, the effect of urbanization on water quality, ways to reduce stormwater pollution and reduction of invasive species.

For further information, contact Program Manager Robert Thompson at the Hamilton County Surveyor's Office,

776-8495.

New church to offer gift wrapping

DeerCreek Community Church, a new church in Fishers, is partnering with three Fishers Cynthia's Hallmark Shops to offer free gift wrapping of purchases made at Cynthia's from 11 a.m. to 2 p.m. Saturday.

Visit any of the stores

APPENDIX H.2

STAKEHOLDER MEETING EXIHIBITS

STAKEHOLDER MEETING 1

AGENDA

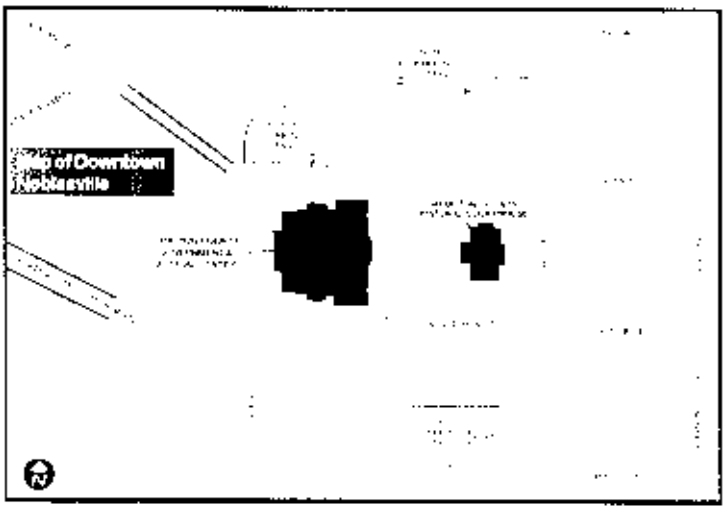
Stakeholders Steering Committee Kickoff Meeting
Cool Creek Watershed Management Plan
Hamilton County, Indiana

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

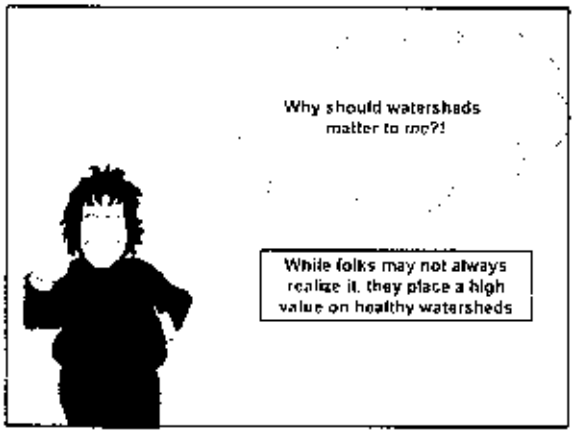
Eric Oliver
[illegible]
(317) 233-2172

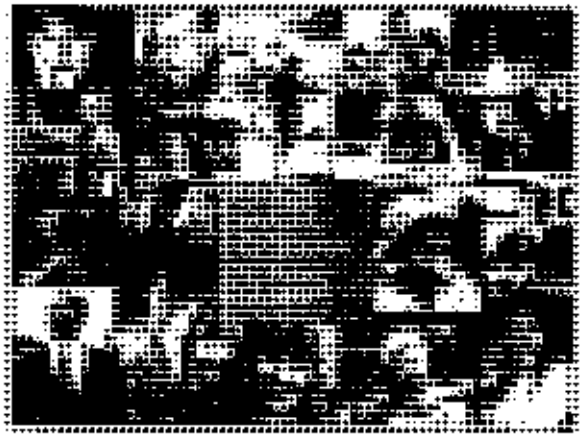
Watershed Specialist

Indiana Department of
Environmental Management

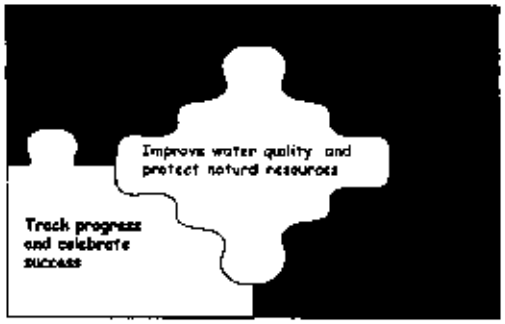
What Is a Watershed?

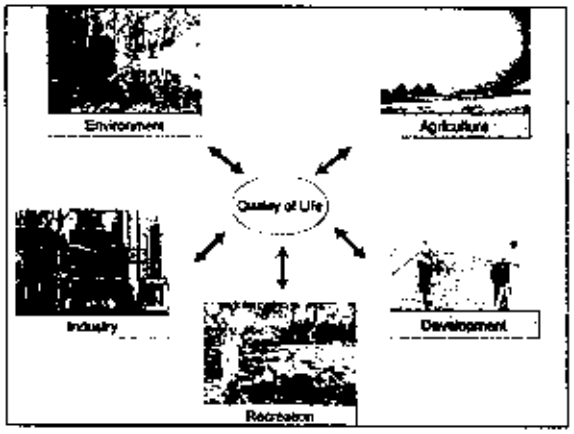
A watershed is the area of land that drains to a particular point along a stream





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 mi.^{2}
- From 99th 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

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

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 (2001)
- Hydraulic Report for Village Farms Wellong (1996)
- Countryside Overall System Drainage Report (2001)
- 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

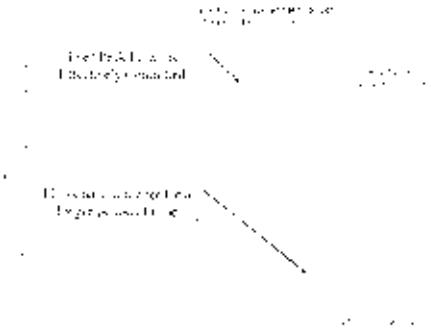
Problem Analysis

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

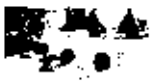


Problem Analysis

Hydraulic Evaluation

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

Examples



Problem Analysis

Stream Channel Evaluation

Severe erosion along lower reach of Cool Creek

Floodplain encroachments constrict 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

Problem Analysis

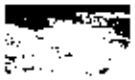
Floodplain Development

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

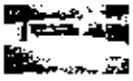
Problem Analysis

Water Quality Sampling Locations

- 186th Street



- 146th Street



- 116th 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 171st Street Bridge and Regrade Roadway
- Regrade Roadway at 151st Street bridge
- Replace Gurley Street bridge (Anna Kendall Drain)
- Replace Cherry Street bridge (Anna Kendall Drain)

Solution Development

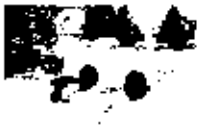
Streambank Flooding/Road Topping Solutions

- 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 Carmel Drive Culvert (Hot Lick Creek)



Solution Development

Streambank Erosion Solutions

Restoration Projects at:

- Highway Run –
  - Downstream of Stonebridge Drive
- J.G. Kenyon Drain –
  - 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 of 131st 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 171st 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 Overlapping Solutions -	$2,720,000
Neighborhood Solutions -	$160,000
Streambank Erosion Solutions -	$570,000
Regional Detention Solutions -	$5,000,000
Total of All Solutions -	$8,490,000

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 (IUPUI); Ms. Amanda Smith, Hamilton County Parks Department; Ms. Sarah Baxter, Williams Creek Consulting; Ms. Chant Laupus, 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 effect what they have said and come up with a consensus on what the Steering Committee could 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 inseminating 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 319 Grant for the Little Cicero 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 banks 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 stomps 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 3rd 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	HCSC Program Mgr.	on File	on File
Sam Robertson	Clark-Dietz	(317) 582-0300	samuelr@clark-dietz.com
Sky Schelle	IDEM	317 234-4094	sschelle@idem.in.gov
Carrie Cason	Westfield	317-896-5577	ccason@westfield.in.gov
Amanda Foley	Carmel	317-[illegible]571-2441	afoley@carmel.in.gov
Greg Rogers	HCSO Plan Reviewer	776-8495	grr@co.hamilton.in.us
Jill Hoffmann	Williams Creek Consulting	423-0690	jhoffmann@williamscreek.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)

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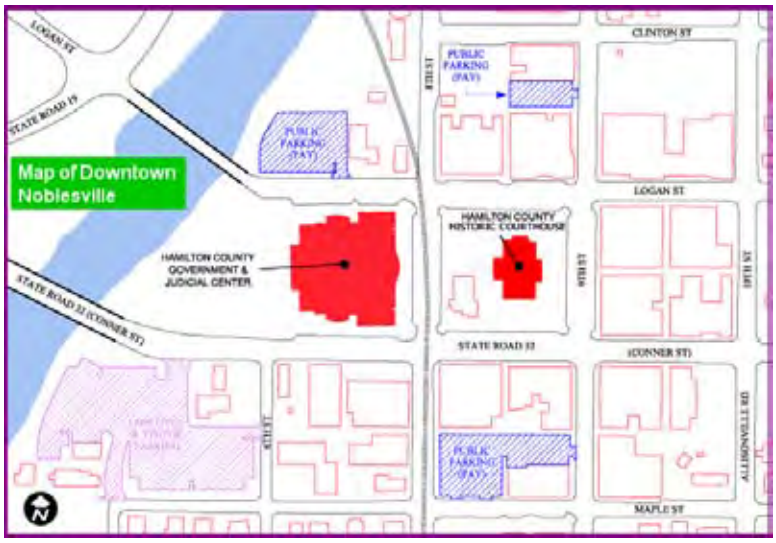
1. Introductions and Sign-in

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 4th, 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 folows:

- 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

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 191st 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 169th 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).

- 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

Overall Project Update

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

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:
  - 161st and Westfield Blvd (owned by Westfield?) – constructed wetland
  - Washington Woods Elementary School (Grassy Branch)

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.

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

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)

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

Other "Goings-On" in the Watershed

(**the good**, the bad, and the ugly!)

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(**the good**, the bad, and the ugly!)

April 2005 *September 2005*

Streambank Restoration – Cool Creek Park
by Hamilton County SWCD

Other "Goings-On" in the Watershed

(**the good**, the bad, and the ugly!)

Center for Earth and Environmental Science
Indiana University - Purdue University, Indianapolis

Cool Creek Park

CEES/Cool Creek Park Partnership

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

Other "Goings-On" in the Watershed

(the good, **the bad**, and the ugly!)

Other "Goings-On" in the Watershed

(the good, the bad, and **the ugly**!)

Noblesville Daily Times

Cool Creek polluted

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

Chapter 9.0 Contents

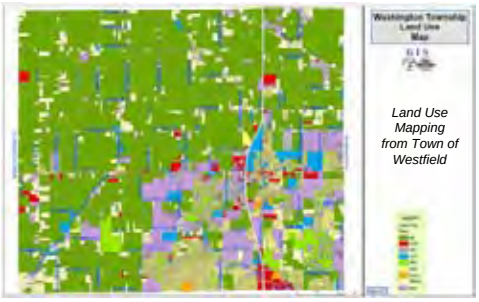
9.1 Introduction

- 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

9.2 Watershed Description

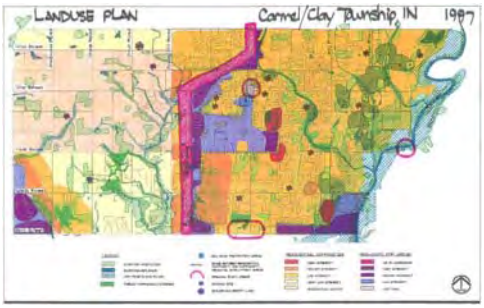
- Generally adequately described in 2003 Plan
- Additional information included:
  - Land Use Breakdown
  - New Land Use Mapping (Westfield)
  - Population Trends

9.3 Watershed Description (land use)



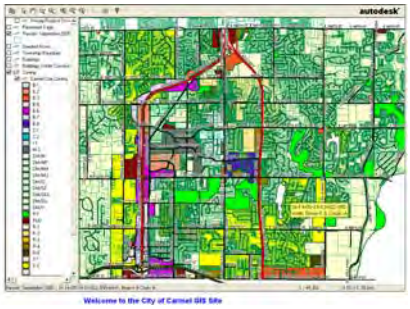
Land Use Mapping from Town of Westfield

9.3 Watershed Description (land use)

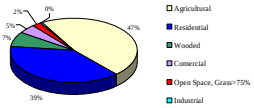


9.3 Watershed Description (zoning)

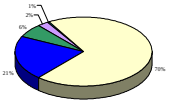
Zoning Map City of Carmel



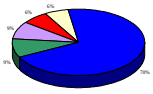
9.2 Watershed Description (land use)



Overall Watershed



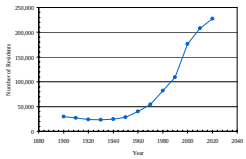
Upper Watershed
(above 146th St.)



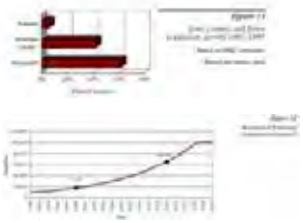
Lower Watershed
(below 146th St.)

9.3 Watershed Description (population)

Hamilton County



Westfield Growth



9.3 Water Quality Evaluation and Benchmarks

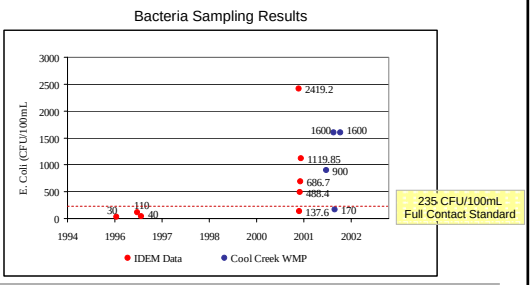
- Utilized sampling data from 2003 Cool Creek Plan
  - Cool Creek – 3 locations in watershed, dry and wet weather
  - Visual (Stream Inventory Maps)
- IDEM Assessment Branch Data
  - 1992, 1996, and 2001 data
  - Data collected in lower watershed (Hazeldell or Gray Road)
  - Lab data, field data, macroinvertebrate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

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

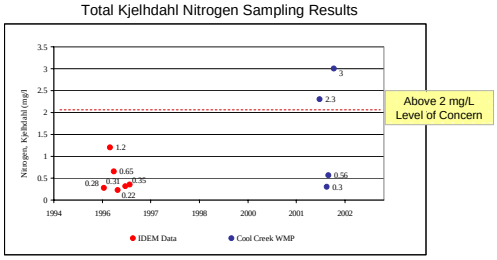
Parameter		Typical Wet Weather Values Reported in Literature	116th Street Crossing				146th Street Crossing				186th Street Crossing			
			Dry Weather		Wet Weather		Dry Weather		Wet Weather		Dry Weather		Wet Weather	
			06/21/02	08/08/02	03/25/02	08/18/02	06/21/02	08/08/02	03/25/02	08/08/02	06/21/02	08/08/02	03/25/02	08/18/02
BOD	mg/L	12 [1]	<5	<5	5.1	5.5	<5	<5	5	6.8	<5	<5	5	5.4
COD	mg/L	84 [1]	<10	<10	40	59	<10	8.8	10	31	<10	11	10	32
Nitrogen, Kjeldahl	mg/L	2.35 [1]	0.56	0.3	2.3	3.0	0.84	0.54	2.1	3.6	0.73	0.69	1.1	2.1
Nitrogen, Nitrate	mg/L	0.96 [1]	0.65	0.47	0.9	0.69	0.85	0.16	1.7	0.81	1.8	0.95	2.2	1.2
Nitrogen, Ammonia	mg/L	0.26 - 1.1 [1]	<0.10	<0.10	0.68	0.14	<0.10	<0.10	5.1	0.16	<0.10	<0.10	4.3	0.29
Nitrogen, Total	mg/L	3.31 [1]	1.2	0.77	3.2	3.7	1.7	0.7	3.3	4.4	2.5	1.3	3.3	3.3
Nitrogen, Organic	mg/L	1.25 [1]	0.56	0.3	0.4	2.9	0.84	0.49	<0.10	3.4	0.73	0.66	<0.10	1.8
Phosphorus, Dissolved	mg/L	0.16 [1]	<0.05	<0.05	<0.05	0.10	<0.05	<0.05	<0.05	0.25	0.067	0.07	<0.05	0.29
Suspended Solids	mg/L	100 [1]	<5	<5	120	480	<5	<5	61	580	<5	10	11	160
Dissolved Solids	mg/L	N/R	440	530	280	120	390	430	290	210	390	450	390	140
Coli	/100 mL	11,000 [6]	170	>1600	300	1600	200	>1600	300	1600	170	>1600	800	>1600
Fecal Streptococcus	/100 mL	35,000 [6]	13	3	100	400	12	<1	240	960	5	4	<10	1700
Chromium, Hex	mg/L	0.007 [5]	0.01	<0.01	<0.01	0.015	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.012
Phenol	mg/L	0.006 - 0.115 [5]	0.012	0.022	<0.01	0.025	<0.01	<0.01	<0.01	0.017	<0.01	<0.01	<0.01	0.018
Copper	mg/L	0.047 [6]	<0.02	<0.02	<0.02	0.033	<0.02	<0.02	<0.02	0.025	<0.02	<0.02	<0.02	<0.02
Nickel	mg/L	0.022 [6]	<0.01	<0.01	<0.01	0.018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	mg/L	0.178 [5]	<0.05	<0.05	<0.05	0.095	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

NR/N/A Not Reported

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



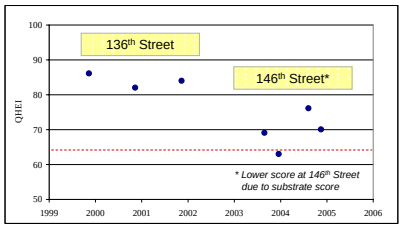
9.3 Water Quality Evaluation and Benchmarks (IDEM Assessment Branch Data)



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

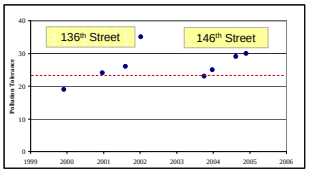
9.3 Water Quality Evaluation and Benchmarks (Volunteer Monitoring – Habitat Data)

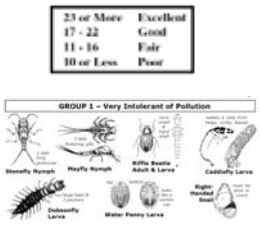


Scoring Factors
- Substrate
- In-stream cover
- Channel morphology
- Riparian zone & bank erosion
- Pool/glide and riffle/run
- Stream gradient

Scoring Criteria
>64 Fully Supporting
51-64 Partially Supporting
<51 Not Supporting

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





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

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)

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

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

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

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

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

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*

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 3

UPPER WHITE RIVER WATERSHED ALLIANCE/COOL CREEK STAKHOLDER

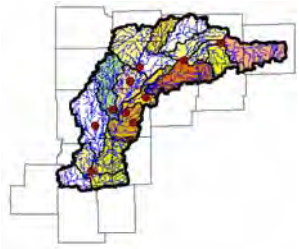
Meeting

November 2, 2005

Please Print

NAME & Co./Dept.:	E-MAIL:
Summer O'Brien/Williams Creek	sobrien@williamscreek.net
Rob Thompson	
Hans Peterson	hansp@clark-dietz.com
WALTER EVANS	wae@co.hamilton.in.us
Sam Robertson	samuelr@clark-dietz.com
Rob Shumowsky	rjshum@mecog.net
MEG ANDERSON	manderson@cbbel-in.com
LARRY STOUT	
William (Bill) SAVAGE/City of Elwood	savagewd@hotmail.com
KENT WARD /Ham Co. Surveyor	
Chris Meador / American Conveyor	cmeador@americons.com
Bob Meyer	robert.meyer@comcast.net
John Buechler	~~John Buechler~~

FAX 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 2nd, 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

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 116th 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

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

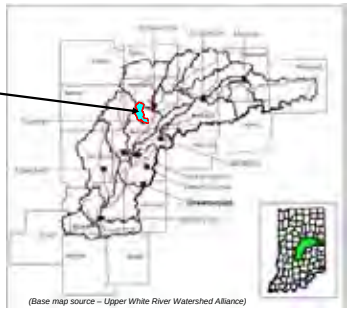
November 2, 2005

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

Cool Creek Watershed

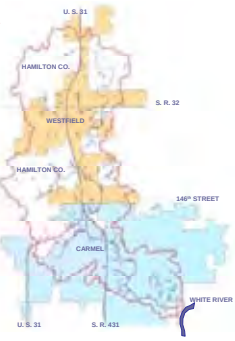
- HUC Name
  - Cool Creek-Grassy Branch/Little Cool Creek
- HUC 14-digit
  - 051201090030



(Base map source – Upper White River Watershed Alliance)

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



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 %

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)

Recent Watershed Activities


April 2005


September 2005

Streambank Restoration – Cool Creek Park
by Hamilton County SWCD

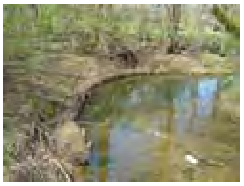
Recent Watershed Activities


April 2005


September 2005

Streambank Restoration – Cool Creek Park
by Hamilton County SWCD

Recent Watershed Activities


April 2005


September 2005

Streambank Restoration – Cool Creek Park
by Hamilton County SWCD

Recent Watershed Activities


April 2005


September 2005

Streambank Restoration – Cool Creek Park
by Hamilton County SWCD

Recent Watershed Activities

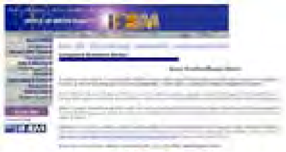

Center for Earth and Environmental Science
Indiana University – Purdue University, Indianapolis

Cool Creek Park

CEES/Cool Creek Park Partnership

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

Recent Watershed Activities



Recent Watershed Activities

Noblesville Daily Times

One of the nation's fastest-growing daily newspapers

Cool Creek polluted

By Jack Harper | Editor

WESTFIELD — Rainwater mixed with crop 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 Sweet, a public information officer at the Indiana Department of Natural Resources, water laden with ammonium nitrate flowed into a storm sewer outlet at Wall Elevator, located at 131 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," Sweet said Thursday afternoon.

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

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

Fish kill probe

By Jack Harper

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

Chapter 9.0 Contents

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

Water Quality 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 (Hazeldell or Gray Road)
  - Lab data, field data, macroinvertebrate
- Volunteer Monitoring (Hoosier River Watch)
  - 2001, 2002, 2004, 2005
  - 136th Street, 146th Street
  - Streamflow, Chemical, Biological, Habitat

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

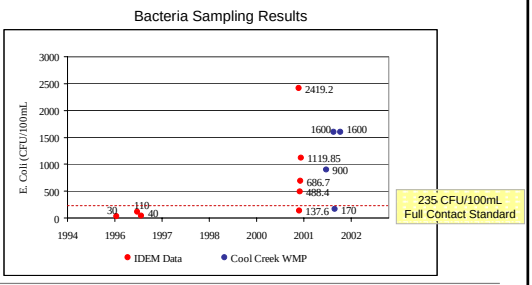
Water Quality Benchmarks (2003 Cool Creek Plan)

Parameter		Typical Wet Weather Values Reported in Literature	116th Street Crossing				146th Street Crossing				186th Street Crossing			
			Dry Weather		Wet Weather		Dry Weather		Wet Weather		Dry Weather		Wet Weather	
			06/21/02	09/09/02	03/25/02	08/18/02	06/21/02	09/09/02	03/25/02	08/18/02	06/21/02	09/09/02	03/25/02	08/18/02
BOD	mg/L	12 [1]	<5	<5	6.1	5.5	<5	<5	5	6.6	<5	<5	5	5.4
COD	mg/L	91 [1]	<10	<10	10	69	<10	9.8	10	81	<10	11	10	30
Nitrogen, Kjeldahl	mg/L	2.36 [1]	0.55	0.3	2.3	3.0	0.84	0.54	2.1	3.6	0.70	0.69	1.3	2.1
Nitrogen, Nitrate	mg/L	0.96 [1]	0.65	0.47	0.9	0.69	0.85	0.18	1.2	0.65	**4.8**	0.65	**4.2**	1.3
Nitrogen, Ammonia	mg/L	0.26 - 1.1 [2]	<0.10	<0.10	0.68	0.14	<0.10	<0.10	**5.1**	0.16	<0.10	<0.10	**4.3**	0.29
Nitrogen, Total	mg/L	2.31 [1]	1.2	0.77	3.2	3.7	1.7	0.7	3.3	4.4	2.5	1.3	1.3	3.3
Nitrogen, Organic	mg/L	1.25 [1]	0.55	0.3	1.4	2.9	0.84	0.49	<0.10	3.4	0.73	0.56	<0.10	1.8
Phosphorus, Dissolved	mg/L	0.18 [1]	<0.05	<0.05	<0.05	0.15	<0.05	<0.05	<0.05	0.23	0.067	0.07	<0.05	0.28
Suspended Solids	mg/L	100 [1]	<5	<5	120	**480**	<5	<5	61	**340**	<5	10	11	160
Dissolved Solids	mg/L	N/R	440	520	380	320	390	430	290	240	390	460	350	140
E.coli	/100 ml.	11,000 [1]	170	>1600	900	1600	220	>1600	300	1600	170	>1600	900	>1600
Fecal Streptococcus	/100 ml.	35,000 [1]	13	3	120	600	12	<1	240	960	5	4	<10	1700
Chromium, Hex	mg/L	0.007 [4]	0.01	<0.01	<0.01	0.015	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.012
Phenol	mg/L	0.006 - 0.115 [5]	0.012	0.002	<0.01	0.025	<0.01	<0.01	<0.01	0.017	<0.01	<0.01	<0.01	0.018
Copper	mg/L	0.047 [1]	<0.02	<0.02	<0.02	0.033	<0.02	<0.02	<0.02	0.025	<0.02	<0.02	<0.02	<0.02
Nickel	mg/L	0.012 [1]	<0.01	<0.01	<0.01	0.018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	mg/L	0.176 [1]	<0.05	<0.05	<0.05	0.095	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

N/R = Not Reported

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

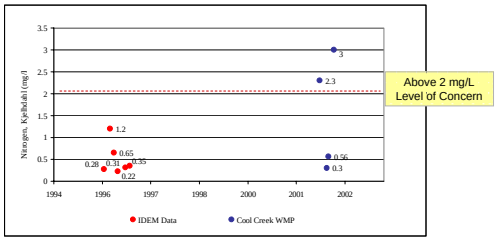
Water Quality Benchmarks (IDEM Assessment Branch Data)



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

Water Quality Benchmarks (IDEM Assessment Branch Data)

Total Kjelhdahl Nitrogen Sampling Results

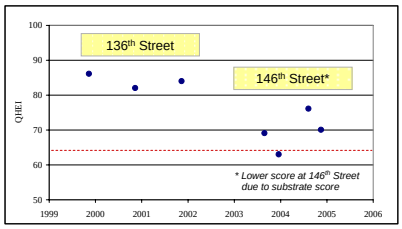


Water Quality Benchmarks (IDEM Assessment Branch Data)

- 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

Water Quality Benchmarks (Volunteer Monitoring – Habitat Data)

Qualitative Habitat Evaluation Index (QHEI) Scores

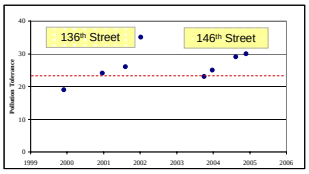


Scoring Factors
- Substrate
- In-stream cover
- Channel morphology
- Riparian zone & bank erosion
- Pool/glide and riffle/run
- Stream gradient

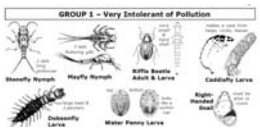
Scoring Criteria
>64 Fully Supporting
51-64 Partially Supporting
<51 Not Supporting

Water Quality Benchmarks (Volunteer Monitoring – Biological Data)

Pollution Tolerance Score



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



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

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

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

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)

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

Regional Water Quality Facilities

Oak Manor Stormwater Quality Facility

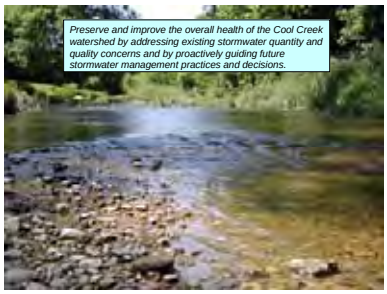
Regional Water Quality Facilities

High Priority Streambank Erosion Areas






Input, Feedback, Questions?



STAKEHOLDER MEETING 4

SIGN IN SHEET

Cool Creek Stakeholder Meeting

Cool Creek Watershed Management Plan
Hamilton County, Indiana

November 30, 2005
10:00 a.m.

Name	Department/Area of Responsibility	Telephone	E-mail	In-Kind Time (including travel)
Bob Thompson	HCSO	770-8833	KCT@co.hamilton.in.us	
Sky Schelle	IDEM	234-4094	sschelle@dem.in.gov	
Bonny Elifritz	IDEM	234-0922	belifr.te idem.in.gov	
Summer O'Brien	Williams Creek Consulting	423-0690	sobrien@williamscreek.net	3.5 hrs
Hans Peterson	Clark Dietz, Inc.	582-0300	hansp@clark-dietz.com	
Sam Robertson	Clark Dietz, Inc.	582-0300	samuelr@clark-dietz.com	
Amanda Foley	City of Carmel	571-2441	afoley@carmel.in.gov	3 hr.
Amanda Smith	Ham. Co. Parks	848-0576	ads@co.hamilton.in.us	3 hours [illegible]

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

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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

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On November 30th, 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 5th, 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

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.

- 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 151st Street & Oak Road.

- Ms. O'Brien stated they have been working with a developer to construct a wetland facility at 161st 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.

- 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.

- 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.

APPENDIX H.3

INTERVIEW EXHIBITS

WESTFIELD INTERVIEWS

AGENDA

Westfield Interview Workshop

Cool Creek Watershed Management Plan
Hamilton County, Indiana

June 20, 2005 – 9:30 a.m. - Noon

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1. Introductions and Sign-in
2. Cool Creek Watershed Overview
3. Previous Cool Creek Watershed Planning Efforts
4. IDEM Section 319 Watershed Management Plan Components
5. Discussion of Problem Areas
6. Discussion of Implementation Priorities
7. Closing and Follow Up Action Items

SIGN IN SHEET

Westfield Interview Workshop

Cool Creek Watershed Management Plan
Hamilton County, Indiana

June 20, 2005
9:30 p.m. – Noon

Name	Department/Area of Responsibility	Telephone	E-mail
Hans Peterson	Clark Dietz, Proj. Mgr	(317) 582-0300	hanspe@clark-dietz.com
Doug Valmore	Clark Dietz, Proj. Eng	(317) 582-0300	hanspe@clark-dietz.com
Carrie Cason	Westfield	317 896-5577	ccason@westfield.in.gov
[illegible]	WESTFIELD	[illegible]	[illegible]
Renee Goff	Westfield	317-896-5452	rgoff@westfield.in.gov
ANDY KERN	WESTFIELD PUBLIC WORKS	317.896-5452	AKERN@WESTFIELD.IN.GOV
Eric Watts	Westfield	317-896-5452	EWATTS@westfield.IN.GOV
Al Salzman	Westfield	317-896-5577	ASALZMAN@WESTFIELD.IN.GOV
KURT WANNINGER	WPWO	317-896-5452	KWANNENGER@WESTFIEL.IN.GOV
Kevin [illegible]	Commissioner Superintendent	317-[illegible]-5577	[illegible]

MEETING SUMMARY
WESTFIELD STAFF INTERVIEWS

Project:	Cool Creek Watershed Management Plan
Date:	June 20, 2005
Time:	9:30 a.m.
Location:	Westfield Town Hall
Staff Attendees:	Sign In Sheet Attached

A staff interview session was held to introduce the update of the Cool Creek Watershed Management Plan to the Town of Westfield and to solicit input and answer questions. Ten people attended the meeting. The following is a summary of this interview session.

Hans Peterson initiated the session by conducting informal introductions, and then proceeded with a 20-minute PowerPoint presentation summarizing the background and purpose of the Cool Creek Watershed Management Plan. The presentation included a summary of the findings, alternatives, and recommended solutions. Following the presentation the interview was opened for general discussion and questions/answers. The following summarizes the key points that were discussed:

- Kurt Wanninger (Public Works) addressed the issue of construction in the floodplain. Does Hamilton County have a regulation regarding this? Hans Peterson stated that Hamilton County has adopted a very restrictive ordinance for construction in the floodplain, with the intent of discouraging floodplain construction whenever possible. Construction in the floodplain is not allowed, unless a variance is granted. Any variance will come with the requirement that floodplain area must be replaced at a 10:1 compensatory ratio.

- Mr. Wanninger noted that Westfield will likely adopt a similar floodplain ordinance.

- Mr. Wanninger noted that the County plans to replace the 186th Street culvert at Grassy Branch, but that this may be delayed due to funding.

- Westfield has plans for recreational trails along Cool Creek near the new school.

- Mr. Wanninger stated that there is a lot of Beaver activity along Grassy Branch. They have been working with the County to eradicate this problem.

- Mr. Peterson asked if there are any major developments pending. Mr. Wanninger stated that the only major development pending at this time is the Sycamore Development.

- Mr. Wanninger questioned whether the elevated nutrient levels found during the Cool Creek stream sampling program could possibly be caused by overflow from the holding basins on the Heartland Growers property.

- Mr. Wanninger stated that there are four neighborhoods that are still on septic systems, and that some systems in each of these areas are failing. They are Far Hills (161st and U.S. 31), Buena Vista (156th Street and U.S. 31), Ridgewood (161st Street and Oakridge Road), Bokeelia (191st Street and Tomlinson Road), and Brookview Place (191st Street and Flippins Road). Westfield intends to connect these homes to the public sewer system as soon as feasible. Barrett Law funding may be utilized.

- The Town is interested in constructing recreational trails along Cool Creek and its tributaries. Mr. Wanninger asked if this is something that may be fundable through a Section 319 grant. Mr. Peterson stated that it is unlikely that this activity would be eligible unless it could somehow be tied to nonpoint source stormwater pollution reduction efforts.

- In summary, Mr. Wanninger stated that the Town has the following priorities regarding potential improvements in the Cool Creek Watershed:

    1) Replace bridges and upgrade roads to reduce floodwater overtopping.
    2) Replace undersized culverts
    3) Construct regional detention facilities to reduce peak downstream flows and to improve water quality
    4) Replace failing septic systems

Interview Workshop
Town of Westfield

City of Carmel

Town of Westfield

Hamilton County

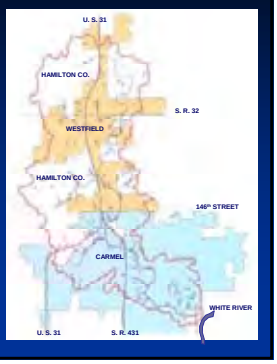
Cool Creek Watershed Management Plan
Section 319 Grant
June 20, 2005

Agenda

- Introductions
- Cool Creek Watershed Overview
- Previous Planning Efforts
- IDEM Section 319 Grant Components
- Discussion of Problem Areas
- Discussion of Implementation Priorities
- Closing / Follow Up

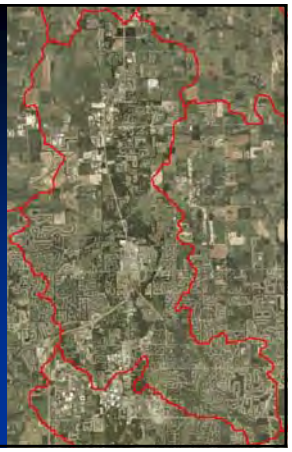
Cool Creek Watershed Overview

- 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



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

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

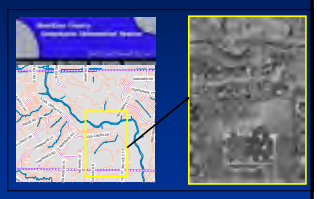
Scope of the Previous Study

- 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



http://www.co.hamilton.in.us/gis/start.html

Inventory & Problem Identification

Previous Reports & Studies

- IDNR Memorandum – Grassy Branch
- Hydraulic Report for Village Farms Wilfong
- Countryside Overall System Drainage Report
- Soil Survey of Hamilton County, Indiana
- FEMA Flood Insurance Study
- 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

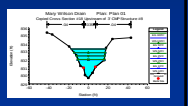
Problem Analysis

- 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

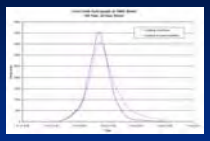
- Assess the volume and rate of runoff for various storm events
- Evaluate existing stormwater conveyance and storage facilities
- Evaluate stormwater runoff impacts from future development
- Determine appropriate control measures



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
- More frequent "bank-full" conditions tend to exacerbate erosion

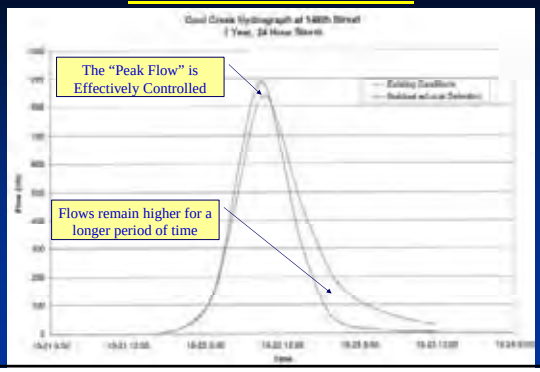


Cool Creek Upstream of White River confluence

Cool Creek Upstream of 116th Street in Golf Course

Problem Analysis

Effects of Urbanization



Problem Analysis

Hydraulic Evaluation

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

Examples

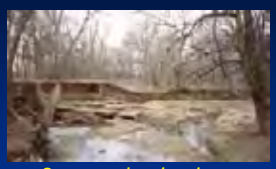
Inadequate bridge – 171st St. over Cool Creek

Culverts filled with sediment - Walter Street and Walter Court

Inadequate culverts – Carmel Drive over Hot Lick Creek

Problem Analysis

Stream Channel Evaluation



Severe erosion along lower reach of Cool Creek

Floodplain encroachments constrict flow and increases downstream erosion

Stream Information Compiled on Inventory Maps

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

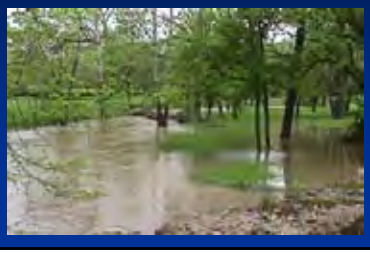
Forested Riparian Buffer along Cool Creek East of S. R. 431

No Riparian Buffer – Cool Creek South of 191st Street

Problem Analysis

Floodplain Development

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



Problem Analysis

Water Quality Sampling Locations

- 186th Street

- 146th Street

- 116th 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 171st Street Bridge and Regrade Roadway
- Regrade Roadway at 151st 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 Walter Street and Walter Court Culverts (Highway Run)
- Replace Private Drive Culvert between Walter Street and Walter Court (Highway Run)
- Replace Thornberry Drive Culvert (Highway Run)
- Replace Carmel Drive Culvert (Hot Lick Creek)

Solution Development

Streambank Erosion Solutions

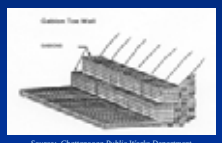
Restoration Projects at:

- Highway Run –
  - Downstream of Stonehedge Drive
- H.G. Kenyon Drain –
  - 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 of 131st Street (Main Street) and
  - Upstream of Keystone Avenue

Streambank Stabilization Techniques

Riprap and Live Stakes (Joint Plantings)
Source: Federal Interagency Stream Restoration Working Group, 1998

Brushmattress Technique (Source: USDA-NRCS 1996)

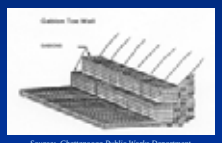


Source: Chattanooga Public Works Department

Streambank Stabilization Techniques

Riprap and Live Stakes (Joint Plantings)
Source: Federal Interagency Stream Restoration Working Group, 1998

Brushmattress Technique (Source: USDA-NRCS 1996)



Source: Chattanooga Public Works Department

Cool Creek Demonstration Project (Hamilton County SWCD)

Cool Creek Demonstration Project (Hamilton County SWCD)

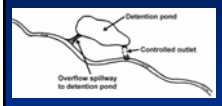
Solution Development

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 171st 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



171st Street Regional 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
  Improve water quality

Recommendations

Cost of Improvements

Stream Flooding/ Roadway Overtopping Solutions -	$2,720,000
Neighborhood Solutions -	$100,000
Streambank Erosion Solutions -	$570,000
Regional Detention Solutions -	$5,100,000
Total of All Solutions -	$8,490,000

IDEM 319 Plan Updates

- Two Public Hearings
- Quarterly Steering Committee Meetings
- Carmel, Westfield, and Hamilton County Interviews
- Quarterly Newspaper Articles
- Written Plan (updates to current Cool Creek Report)

Additional Problems/Concerns

- Critical Areas to Protect
- Agricultural Impacts
- Additional Streambank Erosion Areas
- Specific Development Concerns
- Flooding Concerns
- Ordinance deficiencies
- Opportunities for other regional solutions

Implementation Priorities

High	Med	Low	Improvement
			Repair Eroded Streambanks
			Solve flooding problems
			Construction Regional Off-Line Water Quality Pond(s)
			Implement Stream Buffer and/or Prohibit Floodplain Fill Ordinance
			Improve controls on new development
			Preserve Open Space/Sensitive Areas
			Improve Agricultural BMPs

CARMEL INTERVIEWS

AGENDA

Carmel Interview Workshop

Cool Creek Watershed Management Plan
Hamilton County, Indiana

June 20, 2005 – 2:00 p.m. – 4:00 p.m.

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1. Introductions and Sign-in
2. Cool Creek Watershed Overview
3. Previous Cool Creek Watershed Planning Efforts
4. IDEM Section 319 Watershed Management Plan Components
5. Discussion of Problem Areas
6. Discussion of Implementation Priorities
7. Closing and Follow Up Action Items

SIGN IN SHEET

Carmel Interview Workshop

Cool Creek Watershed Management Plan
Hamilton County, Indiana

June 20, 2005
2:00 p.m. – 4:00 p.m.

Name	Department/Area of Responsibility	Telephone	E-mail
Hans Peterson	Clark Dietz, Inc, Proj. Mgr	(317) 582-0300	hansp@clark-dietz.com
Doug Valmore	Clark Dietz Proj Eng	(317) 582-0300	dougv@clark-dietz.com
Mark Westermeier	Parks	317 571 2485	mwestermeier@carmel.in.gov
David Loveall	Street	317) 733-2001	DLoveall@ci.carmel.gov
David Huffman	Street	317) 733-2001	DHuffman@ci.carmel.gov
Amanda Foley	Eng	317-571-2441	afoley@carmel.in.gov
Adrienne Keeling	DCCS	317-571-2417	akeeling@carmel.in.gov
[illegible]	Building + Code	317-571-2435	[illegible]@carmel.in.gov
Mike McBride	Engineering	317-571-2441	MMCBRIDE@CARMEL.IN.GOV
Scott Brewer	DCCS · Urban Forestry	317 · 571-2478	SBrewer@CARMEL.IN.GOV

MEETING SUMMARY
CARMEL STAFF INTERVIEWS

Project:	Cool Creek Watershed Management Plan
Date:	June 20, 2005
Time:	2:00 p.m.
Location:	Carmel Town Hall
Staff Attendees:	Sign In Sheet Attached

A staff interview session was held to introduce the update of the Cool Creek Watershed Management Plan to the City of Carmel and to solicit input and answer questions. Ten people attended the meeting. The following is a summary of this interview session.

Hans Peterson initiated the session by conducting presenting a 20-minute PowerPoint summary of the Cool Creek Watershed Management Plan. The presentation included a summary of the findings, alternatives, and recommended solutions. Following the presentation the interview was opened for general discussion and questions/answers. The following summarizes the key points that were discussed:

- Mr. Westermeier (Parks Department) asked what the regulatory requirements or construction guidance is applicable for streambank stabilization. Mr. Peterson stated that the Indiana Erosion Control Handbook is a valuable source of information regarding approved methods of stabilization. He also stated that the Indiana Department of Natural Resources has regulatory authority over any projects that occur along a waterway with a square mile or greater drainage area upstream of the improvement location. We also discussed the pilot streambank stabilization projects constructed in Cool Creek by the Hamilton County SWCD. They would also be a good resource on streambank stabilization techniques.

- Mr. McBride (Carmel City Engineer) asked how new the Hamilton County floodplain restrictions are. Mr. Peterson stated that they have been implemented for approximately one or two years.

- Carmel is interested in adopting a similar floodplain ordinance.

- Carmel has initiated Rule 13 activities (ordinances, staffing, etc.). They are not complete at this time.

- Mr. Peterson asked if there are any septic systems within the community. Mr. McBride stated that there are very few, and the ones that remain are scattered. There is no initiative to remove the remaining isolated septic systems at this time as they are not believed to be a source of pollution.

- Carmel plans to take over erosion and sediment control responsibilities form the Hamilton County SWCD. However, at this time the program is not very effective, due to lack of available staff and lack of enforcement authority.

- Mr. McBride stated that most of the City's stormwater complaints are related to local flooding. The next most frequent complaint is for streambank erosion.

- Mr. Mcbride stated that the City has been increasingly required to perform stream mitigation to compensate for impacts from road projects.

- Mr. Westermeier stated that the most severe streambank erosion problem in the City occurs along Cool Creek at Flowing Well Park (north of 116th Street). He stated that the streambank has been eroding in this area as much as two feet per year. This is a high priority for the City.

Interview Workshop
City of Carmel

City of Carmel

Town of Westfield

Hamilton County

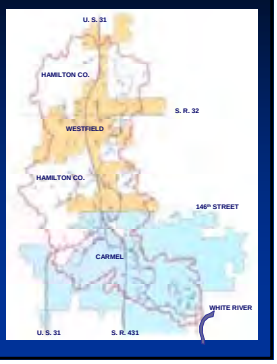
Cool Creek Watershed Management Plan
Section 319 Grant
June 20, 2005

Agenda

- Introductions
- Cool Creek Watershed Overview
- Previous Planning Efforts
- IDEM Section 319 Grant Components
- Discussion of Problem Areas
- Discussion of Implementation Priorities
- Closing / Follow Up

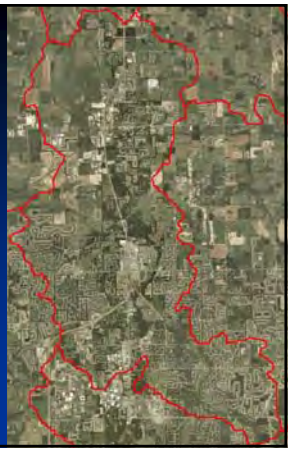
Cool Creek Watershed Overview

- 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



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

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

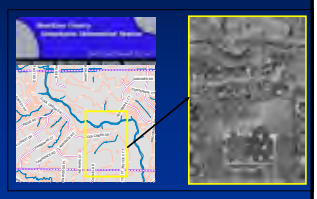
Scope of the Previous Study

- 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



http://www.co.hamilton.in.us/gis/start.html

Inventory & Problem Identification

Previous Reports & Studies

- IDNR Memorandum – Grassy Branch
- Hydraulic Report for Village Farms Wilfong
- Countryside Overall System Drainage Report
- Soil Survey of Hamilton County, Indiana
- FEMA Flood Insurance Study
- 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

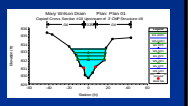
Problem Analysis

- 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

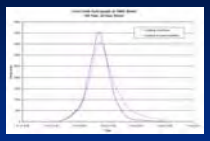
- Assess the volume and rate of runoff for various storm events
- Evaluate existing stormwater conveyance and storage facilities
- Evaluate stormwater runoff impacts from future development
- Determine appropriate control measures



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
- More frequent "bank-full" conditions tend to exacerbate erosion

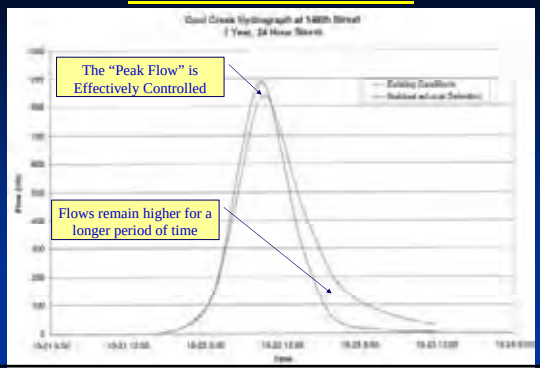


Cool Creek Upstream of White River confluence

Cool Creek Upstream of 116th Street in Golf Course

Problem Analysis

Effects of Urbanization



Problem Analysis

Hydraulic Evaluation

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

Examples

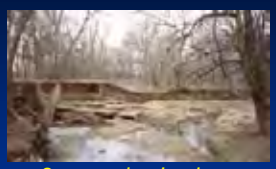
Inadequate bridge – 171st St. over Cool Creek

Culverts filled with sediment - Walter Street and Walter Court

Inadequate culverts – Carmel Drive over Hot Lick Creek

Problem Analysis

Stream Channel Evaluation



Severe erosion along lower reach of Cool Creek

Floodplain encroachments constrict flow and increases downstream erosion

Stream Information Compiled on Inventory Maps

Problem Analysis

Water Quality Evaluation

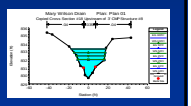
Entailed:

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

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



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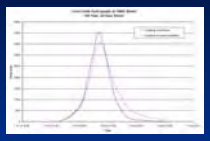

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Cool Creek Upstream of 116th Street in Golf Course

Problem Analysis

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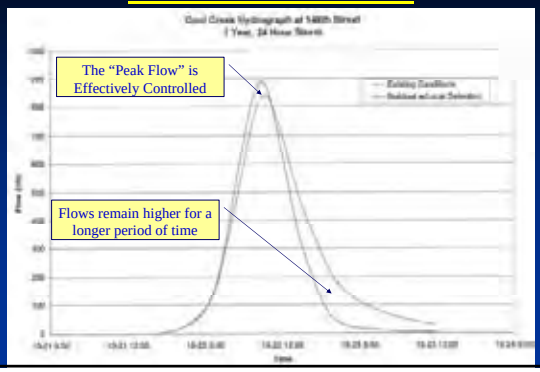

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Hydraulic Evaluation

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

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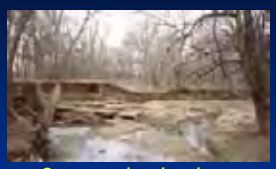


Severe erosion along lower reach of Cool Creek

Floodplain encroachments constrict flow and increases downstream erosion

Stream Information Compiled on Inventory Maps

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

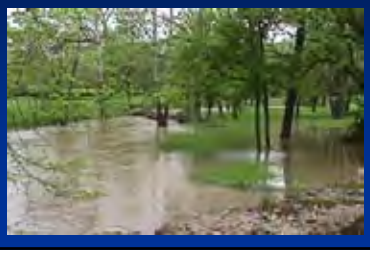
Forested Riparian Buffer along Cool Creek East of S. R. 431

No Riparian Buffer – Cool Creek South of 191st Street

Problem Analysis

Floodplain Development

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



Problem Analysis

Water Quality Sampling Locations

- **186th Street**

- **146th Street**

- **116th 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 171st Street Bridge and Regrade Roadway**
- **Regrade Roadway at 151st 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 Walter Street and Walter Court Culverts (Highway Run)
- Replace Private Drive Culvert between Walter Street and Walter Court (Highway Run)
- Replace Thornberry Drive Culvert (Highway Run)
- Replace Carmel Drive Culvert (Hot Lick Creek)

Solution Development

Streambank Erosion Solutions

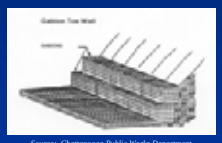
Restoration Projects at:

- Highway Run –
  - Downstream of Stonehedge Drive
- H.G. Kenyon Drain –
  - 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 of 131st Street (Main Street) and
  - Upstream of Keystone Avenue

Streambank Stabilization Techniques

Riprap and Live Stakes (Joint Plantings)
Source: Federal Interagency Stream Restoration Working Group, 1998

Brushmattress Technique (Source: USDA-NRCS 1996)

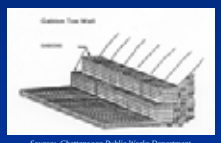


Source: Chattanooga Public Works Department

Streambank Stabilization Techniques

Riprap and Live Stakes (Joint Plantings)
Source: Federal Interagency Stream Restoration Working Group, 1998

Brushmattress Technique (Source: USDA-NRCS 1996)



Source: Chattanooga Public Works Department

Cool Creek Demonstration Project (Hamilton County SWCD)

Cool Creek Demonstration Project (Hamilton County SWCD)

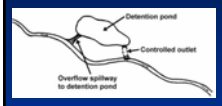
Solution Development

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 171st 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



171st Street Regional 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
  Improve water quality

Recommendations

Cost of Improvements

Stream Flooding/ Roadway Overtopping Solutions -	$2,720,000
Neighborhood Solutions -	$100,000
Streambank Erosion Solutions -	$570,000
Regional Detention Solutions -	$5,100,000
Total of All Solutions -	$8,490,000

IDEM 319 Plan Updates

- Two Public Hearings
- Quarterly Steering Committee Meetings
- Carmel, Westfield, and Hamilton County Interviews
- Quarterly Newspaper Articles
- Written Plan (updates to current Cool Creek Report)

Additional Problems/Concerns

- Critical Areas to Protect
- Agricultural Impacts
- Additional Streambank Erosion Areas
- Specific Development Concerns
- Flooding Concerns
- Ordinance deficiencies
- Opportunities for other regional solutions

Implementation Priorities

High	Med	Low	Improvement
			Repair Eroded Streambanks
			Solve flooding problems
			Construction Regional Off-Line Water Quality Pond(s)
			Implement Stream Buffer and/or Prohibit Floodplain Fill Ordinance
			Improve controls on new development
			Preserve Open Space/Sensitive Areas
			Improve Agricultural BMPs

APPENDIX H.4

NEWSPAPER ARTICLES

HAMILTON COUNTY SURVEYOR'S OFFICE

One Hamilton County Square, Suite 188
Noblesville, Indiana 46060
Phone (317) 776-8495
Fax (317) 776-9628

Press Release

Contact: Robert Thompson, RLA
Phone: (317) 776-8495

FOR IMMEDIATE RELEASE

COUNTY SURVEYOR RECEIVES WATERSHED GRANT

The Hamilton County Surveyor's office is about to expand the existing Cool Creek Watershed Management Plan to meet the Indiana Department of Environmental Management's (IDEM) requirements for a Watershed Management Plan.. The previous Cool Creek Watershed Study done by a local environmental firm, Clark-Dietz, Inc, in cooperation with the Town of Westfield and the City of Carmel, included some analysis of nonpoint source pollution issues; however, the main focus of the study was on flooding problems and development concerns in the watershed. The scope of the study will now be expanded to address IDEM's requirements for a Watershed Management Plan. On January 1st, the Surveyor's Office obtained a Section 319 grant to work with Clark-Dietz to modify the original study which will identify nonpoint source pollution management strategies so that additional grants may be obtained to implement some or all of the water quality best Management Practices (BMPs) in the future.

The Surveyor's Office is organizing a Steering Committee to direct the project. The Steering Committee will include representatives from government and the general public as well as business interests. The Steering Committee will meet quarterly throughout the one year project term. Steering Committee meetings will be open to the public and advertised as such in the local newspaper. The Steering Committee will identify the public's priorities as they pertain to water quality, develop strategies for addressing the public's concerns, and ultimately implement the plan.

If you are interested in participating in this Steering Committee please call the Surveyor's Office at 776-8495.

Hans J. Peterson

From: Robert Thompson [rct@co.hamilton.in.us]

Sent: Wednesday, April 06, 2005 11:31 AM

To: hansp@clark-dietz.com

Cc: afoley@ci.carmel.in.us; mmcbride@ci.carmel.in.us; dalet@clark-dietz.com; Amanda Smith; Jeanette Gartner; miked@deboyland.com; acook@hoosiertradewinds.com; BELIFRIT@idem.in.gov; EOLIVER@idem.in.gov; PBROWN@idem.in.gov; lshrake@iupui.edu; msweat@washingtontownship-hc.us; bhauk@westfieldtown.org; nmyers@williamscreek.net; sbaxter@williamscreek.net

Subject: Cool Creek Meeting

Waterway study looks to clean up creek

By Rebecca L. Sandlin | Staff writer

Residents who attend an April 13 meeting to discuss stormwater management issues in the Cool Creek Watershed are likely to learn some information they don't want to hear.

The watershed is on the Environmental Protection Agency's list of impaired water bodies, and to help take it off that list, the Hamilton County Surveyor's Office received a grant of nearly $31,000 to study pollution in the creek and watershed.

The first public meeting will seek input from the community on key issues regarding Cool Creek. Included in the discussion will be existing stormwater problems in the watershed such as flooding and erosion, the effect of urbanization on the quality of water and the best ways to reduce pollution.

Robert Thompson, program manager at the Hamilton County Surveyor's Office, said he hopes to have many people attend the public meeting, which will take place at the Cool Creek Nature Center auditorium, 2000 E. 151st St. in Westfield.

"We want to find out what their thoughts are, what they believe are the significant sources of pollution and what they can recommend to do about it," Thompson said. "Also, we want to educate them about the watershed and why it is impaired."

The grant will fund a one-year study of the Cool Creek watershed. Thompson said there has been an ongoing study of problems associated with the watershed, beginning about three years ago.

"It was originally studied for flooding issues," he said. "This second one is for the water quality issues, the pollution issues that have occurred in the watershed. That study has been completed and now we're wanting to address the reasons why it is so impaired."

Some of those problems include E-coli bacteria that was discovered in Cool Creek. There are signs posted to warn against swimming, drinking or fishing from the water.

Noblesville Daily Times™
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Much of the cause can be attributed to run-off of storm water from farms, developed areas, failing septic systems and illegal connections where people dump untreated sewage into the stream.

"There are several causes and one of the things the city will do is try to pinpoint the causes more specifically and develop strategies to improve the water quality," Thompson said.

A separate EPA grant for nearly $93,000 also was awarded for a two-year study to begin on the Little Cicero Creek watershed, another body of water on the agency's impaired list.

A future study is planned for Stony Creek.

A consultant will be brought on board to help with the studies.

Know more:

- The first public meeting of the study and cleaning of the Cool Creek Watershed will take place at 7 p.m. April 13 at the Cool Creek Nature Center auditorium, 2000 E. 151st St. in Westfield.

Robert Thompson, RLA, CLARB
Program Manager, Phase II Stormwater
Surveyor's Office
One Hamilton Co. Square
Suite 188
Noblesville, IN 46060
ph: 317-770-8833
fax: 317-776-9628
email: rct@co.hamilton.in.us
Watch over your watershed - you drink what runs off

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Noblesville Daily Times

Public invited to participate in water-quality committee

Daily Times

The Hamilton County Surveyor's office is looking for volunteers to help expand the Cool Creek Watershed Management Plan.

The surveyor's office is going to expand the Cool Creek Watershed Management Plan to meet the Indiana Department of Environmental Management's requirements for a Watershed Management Plan. The surveyor's office will modify the original study to identify nonpoint source pollution management strategies.

The steering committee will direct the project. It will include representatives from government and the general public as well as business interests. The committee will meet quarterly throughout the one-year project term. Steering committee meetings will be open to the public. The committee will identify the public's priorities about water quality, develop strategies for addressing the public's concerns and implement the plan.

People interested in participating on this steering committee may call the surveyor's office at 776-8495.

THE NOBLESVILLE LEDGER.COM

Posted 8:37 PM February 10, 2005

Residents needed to study water quality

February 11, 2005

NOBLESVILLE -- Residents are needed to serve on a steering committee for the Hamilton County Surveyor's Office to identify priorities for water quality, develop strategies to address concerns and implement a plan to address them.

The one-year project will expand the Cool Creek Watershed Management Plan to meet Indiana Department of Environmental Management requirements.

The steering committee also will include government and business representatives. The committee meets quarterly throughout the year. Persons interested in serving on the steering committee may call the Surveyor's Office at (317) 776-8495.

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Cool Creek polluted

By Bob Hansen | Editor

WESTFIELD — Rainwater mixed with crop 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 Waitt Elevator, located at 1131 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 Wanninger, operations manager for the Department of Public Works.

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

"The water was black for 3.1 miles downstream" from Waitt Elevator, Wanninger said. "Fish were found dead in Cool Creek and tributaries, including bass, shad and bluegill."

Most of the fish were fairly small.

Sneed and Wanninger said that apparently what happened is that Waitt Elevator was pumping out a pit under an old silo the company planned to tear down. Grain had been left in the pit, and rainwater had mixed with it over a period of time.

The company pumped out the mixture to a location next to a storm sewer outlet starting at about 11:30 a.m. Wanninger said the toxic substance then entered the storm sewer and flowed into the Goodrich Brothers Regulated Drain and then the Anna Kendall Regulated Drain. It then flowed into Cool Creek, which also is called the Wheeler and Bills Regulated Drain.

The water and crop residue mixture created ammonium nitrate, a substance that robs oxygen from the water. That explains why the fish died, Wanninger said.

The public works department received a call about the problem at 2:57 p.m. Wednesday. At about 4:30 he located the source of the substance at Waitt Elevator.

Sneed confirmed that the discolored water had a high concentration of ammonia and low oxygen levels.

The Indiana Department of Environmental Management was continuing its investigation Thursday. As a precaution, the state agency was sampling the ground near the dumped material and near the polluted waterways, Sneed said. IDEM also was sampling the water in Cool Creek to find how far toxic concentrations of the pollution traveled.

Waitt Elevator will have to pump out the remaining water and residue and contain it so that waste will not flow into the drainage system, Sneed said. He did not know how much material was left in the pit.

Additionally, IDEM officials will be reviewing the situation to decide whether to levy a fine or take other action against the elevator company.

A phone call to Waitt Elevator owner Robert Drayer seeking comment was not returned before publication.

Besides the town public works department and IDEM, other agencies that assisted at the site included the Westfield police and fire departments, Hamilton County Surveyor's office and Hamilton County Emergency Management Agency.

Westfield grain spill kills fish

Workers raze old elevator, pump contents onto ground

By Diana Lamirand
Diana.Lamirand@TheNoblesvilleLedger.com

WESTFIELD — A black, smelly sludge entered a storm drain Wednesday afternoon and resulted in a fish kill in a tributary leading to Cool Creek.

According to a preliminary count Thursday afternoon, 100-150 fish were killed as a result of the toxic substance being released, said Russ Grunden, a spokesman for the Indiana Department of Natural Resources (DNR).

"There were shad, bluegill and at least one bass," said Kurt Wanninger, operations manager for the Westfield Public Works Department.

Employees tearing down an old grain elevator at Waitt Elevator, 1131 E. Indiana 32, had pumped about 2-3 feet of dirty water from the bottom of the elevator onto the ground.

The water, which contained old, fermented corn, soybeans and wheat, flowed into a nearby storm drain and eventually made its way to Cool Creek.

"It was nasty smelling stuff," Wanninger said.

Though the fish kill was minor when compared to the massive one in December 1999 that wiped out fish along a 50-mile stretch of the White River, Grunden said, it's still a loss of resources.

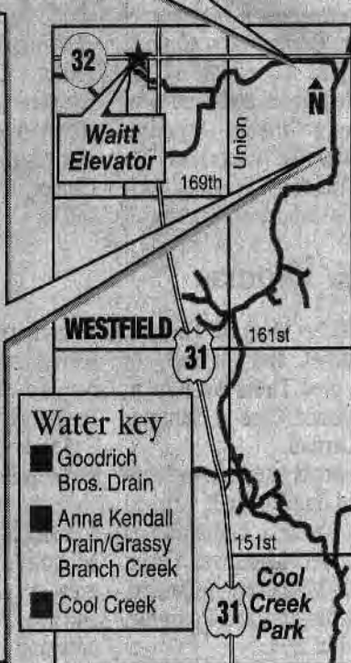
"We take any fish kill seriously," he explained. "These are resources that are part of the state of Indiana and something that all Hoosiers are responsible for."

An Indiana Department of Environmental Management (IDEM) field officer found high ammonia nitrate readings in the

See FISH, Page A22

Fish were found floating dead Wednesday afternoon in a tributary under Timberbrook bridge in the Timberbrook Run subdivision south of Indiana 32. Between 100-150 fish were killed, officials said, as a result of a toxic-substance released from Waitt Elevator Co. in Westfield.

Residents reported seeing this black sludge flowing downstream Wednesday afternoon in a Westfield tributary that leads to Cool Creek near Indiana 32.



Marilyn.Cooley@TheNoblesvilleLedger.com

At least one bass, a popular sporting fish, was found dead Wednesday afternoon in the Anna Kendall Drain or tributary under Timberbrook bridge in the Timberbrook Run subdivision.

No fines for Waitt Elevator yet

FISH/From A1

tributary and creek.

The ammonia nitrate decreased oxygen levels and suffocated the fish, said public information officer Amy Hartsock.

Emergency response officials from Westfield, Hamilton County and IDEM tracked the toxic substance spill for about 3.19 miles from Waitt Elevator to near 161st Street, Wanninger said. The rain that fell Wednesday night and early Thursday flushed the substance further.

"It's probably down to White River by now," Wanninger said Thursday morning.

Residents called Westfield officials about 3 p.m. to report a "black smelly substance" in the Anna Kendall drain or tributary that flows into Cool Creek, Wanninger said, and investigators tracked it for about one mile upstream before they found the contamination source at Waitt Elevator.

When told of the situation, Wanninger said, the company's owners "didn't think it was a big deal. We told them we thought it was a serious situation."

Roger Drayer, who owns the grain elevator business with Gary Fulton, said his employees did not know that they shouldn't pump the contaminated water onto the ground.

"I'm not really sure" what happened, Drayer said. "It's not a huge fish kill... I think Kurt (Wanninger) is trying to make a mountain out of a molehill."

Drayer also pointed out that most of the fish were shad or "junk fish."

Gizzard shad, while sometimes overabundant, provide an important ecological niche in the fishing community, said Tom Flatt, an aquatic habitat coordinator for DNR. They are a plankton feeder, he said, and serve as food for bass fish.

Grunden said the toxic dumping is an ongoing investigation that will probably take a few days. Once the damages are assessed, he said, the responsible party will be notified how much it will cost to reimburse the state for the loss of life.

"We witnessed live fish downstream at some of the access points so it was not a long-running spill," Grunden said.

Hartsock said IDEM officials returned to Waitt Elevator Thur day to further discuss ways to r move the toxic materials in an e vironmentally friendly manner.

The investigation will be r viewed internally before a dec sion is made to assess Waitt owners any fines.

"Right now, we don't know she said.

Call staff writer Diana Lamirand at (317) 444-5545.

"I'm not really sure" what happened. "It's not a huge fish kill. . . . I think Kurt (Wanninger) is trying to make a mountain out of a molehill."

Roger Drayer,
Waitt Elevator co-owner

Owners to restock fish, pay fine

Waitt Elevator wants to 'make it right,' after fish kill in creek.

By Diana Lamirand
Diana.Lamirand@TheNoblesvilleLedger.com

NOBLESVILLE — The owners of Waitt Elevator have agreed to work with the White River Rescue group to restock more than 500 fish killed July 20 after employees dumped sludge down a storm drain.

"We will do some restocking" in addition to any fines that may be assessed by state agencies, said Roger Drayer, who owns the elevator with Gary Fulton. "We will work with Steve (Schwartz) to get that done."

Schwartz, who along with John Bundy formed White River Rescue 2000 after a massive fish kill in December 1999, approached Drayer.

He and Fulton are "trying to make it right," said Schwartz, who's also on the Hamilton County Council.

Schwartz and Bundy have been frustrated throughout the years, Schwartz said, that the Indiana Department of Natural Resources (DNR) assesses fines for fish kills but the agency doesn't use the money to restock the fish that were killed.

"They're (DNR) not putting fish back into that resource," he said. "We'd really like to have it done right."

Bill James, DNR's chief of fisheries, explained that the fines collected from fish kills go into a special account but could be spent on equipment to investigate fish kills or other related items. On a small fish kill like the one that occurred in Westfield, restocking is "not a real practical thing to do," James said. Oftentimes, James said, Mother Nature takes its course and fish replenish themselves long before the state can find hatcheries with the type of fish killed. Other fish may move upstream or downstream and fill the void, too.

The fines are "a powerful fish-management tool but we try to use it discreetly instead of restocking whether it's needed or not," James said.

The fines may be used to buy fish-kill investigation equipment, educational materials for investigators, technical training, streamside rehabilitation projects or buying conservation easement rights to protect key habitats from development.

"That's great," Schwartz said after learning how the funds could be used. "But we really need to restock these little streams.

Instead of waiting for nature to run its course, he said, adult fish need to be put back in as soon as possible. He also thinks DNR should charge stiffer fines so more funds are available to restock every lost resource.

The DNR said about 534 bluegill, green sunfish, minnows, white suckers, sculpins, yellow bullheads, smallmouth bass, largemouth bass and darters were killed in the upstream portion of Cool Creek.

Employees tearing down an old grain elevator pumped about 1,500-2,000 gallons of dirty water from the bottom of the elevator. The water, which contained fermented corn, soybeans and wheat, flowed into a nearby storm drain and eventually made its way to Cool Creek.

Call staff writer Diana Lamirand at (317) 444-5545.

THE NOBLESVILLE LEDGER.COM

Posted 1:07 AM July 26, 2005

Fish kill toll grows

534 fish dead; fines expected

By Diana Lamirand
Diana.Lamirand@TheNoblesvilleLedger.com
July 26, 2005

WESTFIELD -- The number of fish killed Wednesday after Waitt Elevator employees dumped a black, smelly sludge down a storm drain has increased to more than 500 fish, according to a state conservation officer.

John Gano of the Indiana Department of Natural Resources (DNR) said Monday afternoon that he counted 534 bluegill, green sunfish, minnows, white suckers, sculpins, yellow bullheads, smallmouth bass, largemouth bass and darters in an upstream portion of Cool Creek.

"It's a significant number of fish," Gano said, but still small when compared to the 5 million fish killed in December 1999 when a toxic chemical spill from Guide Corp. wiped out everything in the White River between Anderson and Indianapolis.

"It would have been a lot worse if it hadn't rained like it did," Gano said, explaining how the Wednesday night rain diluted the toxic substance as it flowed downstream. "We would have had a more sizeable fish kill . . . we're very fortunate that it rained."

Employees tearing down an old grain elevator at Waitt Elevator, 1131 E. Indiana 32, pumped about 1,500-2,000 gallons of dirty water from the bottom of the elevator. The water, which contained old, fermented corn, soybeans and wheat, flowed into a nearby storm drain and eventually made its way to Cool Creek.

"They didn't have intent to kill fish in the creek . . . there is no criminal intent," Gano said of the workers. But DNR officials will place a monetary value on the loss of fish -- some costing more than others based on their recreational value to local fishermen. "I'd be surprised if it's over $1,000 . . . probably between $500 and $1,000."

The company may also face fines from the Indiana Department of Environmental Management (IDEM) after the state agency reviews investigating officers' reports, IDEM public information officer Barry Sneed said.

"Our goal is to work with the owner to educate him so, hopefully, we will not have any more accidents," Sneed said.

The majority of the fish killed, Gano said, were game fish like bluegill and the green sunfish. There were also 20-30 bass and about 20 bullheads or catfish. There were no gizzard shad, Gano said, despite initial reports.

All fish died within the first mile of the dumping, the conservation officer said, but some fish were still alive further downstream.

Besides being illegal, dumping anything but water into a storm drain is harmful to the environment, said Robert Thompson, program manager with the Hamilton County Surveyor's Office.

"What many people fail to realize is that they are polluting our drinking water supply," he said. "Less that 0.4 percent of the Earth's water supply is available to us by way of rivers, streams, lakes and ground water, and more that 99 percent is not readily drinkable.

"Public education . . . will go a long way to make people aware that storm sewers are for flood control and not for the disposal of wastes and contaminated surface water," he added.

After residents reported a black, smelly substance in the Anna Kendall drain or tributary that flows into Cool Creek, an IDEM field officer found high ammonia nitrate readings. The ammonia nitrate decreased oxygen levels and suffocated the fish, Gano said. Roger Drayer, who owns the grain elevator business with Gary Fulton, said his employees did not know that they shouldn't pump the contaminated water onto the ground.

THE NOBLESVILLE LEDGER.COM

Posted 11:31 PM November 23, 2005

Program aims to oust water pollution

Officials to educate about dumping harmful liquids into storm sewers.

By Leslie Collins
Correspondent
November 25, 2005

NOBLESVILLE -- Washing the family car in the driveway could result in a violation of local and state ordinances. A more blatant offense is changing the car's oil and dumping the drained product into the storm sewer.

Hamilton County officials want to educate the public about illegal residential and commercial dumping into storm drains, rivers, creeks and other bodies of water.

Noblesville, Westfield, Arcadia and Cicero, along with Carmel and Fishers, are included in the Pollution Prevention and Good Housekeeping program. The Hamilton County Commissioners signed the illicit discharge ordinance in July.

"Through ignorance or laziness, people dump oil and other substances (into storm sewers)," said Robert Thompson, storm-water program manager for the Hamilton County Surveyor's Office. "These (substances) are not treated and go directly into rivers and streams."

Citizens washing cars in driveways can use eco-friendly detergents, Thompson said, adding that sudsy runoff from commercial car washes is treated.

The county is also cracking down on illegal commercial dumping.

Amy Ballman of the Hamilton County Health Department has cited at least one Carmel carpet company for discharging what is known as gray water into the storm sewer.

Commercial carpet cleaners often dump cleaning refuse from homes where carpets have been cleaned directly into neighborhood storm sewers, Thompson said.

Carpet companies aren't the only offenders under scrutiny. Construction company crews have been seen rinsing tools and other items in the street after installing concrete, Thompson said.

"That material (cement) has a high pH, which wipes out anything living in a river or stream," Thompson said.

He suspects companies that dump substances down storm sewers don't want to take the time to properly dispose of the waste, but taking that time could save violators a possible $1,000-per-day fine.

David Cage of the Indiana Department of Environmental Management said companies have two options: Either haul the material and dispose of it according to state law or get written approval from the local wastewater treatment plant to discharge it into the sanitary sewer system.

The Carmel Utilities Department will allow businesses to discharge gray water directly into Carmel's sanitary sewers at a cost of $38 per 1,000 gallons, according to Amanda Foley, Carmel's storm-water coordinator.

Foley was out of town last week and unavailable for comment. However, in an e-mail to Thompson, she said carpet-cleaning companies are illegally discharging cleaning fluids into the storm sewers throughout the county.

"This is likely a widespread problem," she said.

Information will be available during a workshop Dec. 7 at the Hamilton County 4-H Grounds, 2003 E. Pleasant St., when the county's new storm-water standards will be unveiled.

REPORT STORM-WATER POLLUTERS

Citizens may report incidents of storm-water pollution or dumping of pollutants into storm drains by calling (317) 776-8495, or by completing a Report-a-Polluter form at www.co.hamilton.in.us

To report a storm drainage problem, call the Hamilton County Surveyor's Office at (317) 776-8495.

PITCH IT PROPERLY

Items such as solvents, pesticides and paint products can pose fire hazards and, if not disposed of properly, may threaten local waterways and groundwater.

The Hamilton County Household Hazardous Waste Center is at 1717 E. Pleasant St., Noblesville.

Hours are: 8 a.m.-4:30 p.m. Mondays-Wednesdays; 11:30 a.m.-8 p.m. Thursdays; 7 a.m.-3:30 p.m. Fridays; 8 a.m.-noon on the second and fourth Saturdays.

HAMILTON COUNTY SURVEYOR'S OFFICE

One Hamilton County Square, Suite 188
Noblesville, Indiana 46060
Phone (317) 776-8495
Fax (317) 776-9628

Press Release

Contact: Robert Thompson,RLA
Phone: (317) 776-8495

FOR IMMEDIATE RELEASE

HAMILTON COUNTY TO RELEASE RESULTS FROM THE COOL CREEK WATERSHED STUDY

The Hamilton County Surveyor's Office invites the public to attend a meeting to discuss findings and provide additional feedback on the Cool Creek Watershed Management Plan, which is scheduled for completion by the end of this year. On December 14th a public meeting will be held at 7 PM in the Cool Creek Nature Center Auditorium, 2000 E. 151st Street in Westfield.

On January 1st, 2005 the Surveyor's Office received a Section 319 Watershed grant from the State of Indiana to work with Clark Dietz, a local environmental firm as well as residents of Westfield and Carmel, to identify stormwater pollution reduction strategies in the Cool Creek Watershed. Since receiving the grant, representatives from Hamilton County, the City of Carmel, and the Town of Westfield, as well as interested individuals have met on several occasions to review water quality data from the Cool Creek Study and to make recommendations for improving the water quality in the watershed. Some of the issues investigated were:

- Existing stormwater problems in the watershed (stream bank erosion, flooding, etc.)
- The effect of urbanization on water quality (Cool Creek is on the State's list of impaired water bodies due to high bacteria levels)
- Best Management Practices (ways to reduce stormwater pollution)
- Reduction of invasive species

Hamilton County, the City of Carmel and the Town of Westfield believe that the residents of the Cool Creek Watershed have played and will continue to play an important role in improving water quality in the watershed. Identification of Best Management Practices to reduce pollution as well as potential stormwater quality improvement projects will be outlined in the meeting. For further information contact:

Robert Thompson, Program Manager, Hamilton County Surveyors Office

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Important Press Release

Contact: Robert Thompson, RLA
Phone: (317) 776-8495

FOR IMMEDIATE RELEASE

SURVEYOR HOLDS MEETINGS ADDRESSING WATER QUALITY IN HAMILTON COUNTY

On December 7th the Hamilton County Surveyor, the Hamilton County Phase II Public Education Committee along with the towns of Cicero, Fishers, Arcadia, the Cities of Carmel and Noblesville held a workshop to inform developers, builders, engineers and public officials about new water quality regulations in Hamilton County. Over 240 representatives attended the all day workshop that outlined new requirements that will help address water quality issues at construction sites as well as post-construction stormwater runoff pollution. New requirements include permits for commercial and residential construction on sites of 1 acre or more, installation of water quality BMP devices in new developments (Best Management Practices) that will help remove pollutants before they enter the streams, rivers and lakes as well as stiff penalties for developers that fail to meet the new requirements.

~ MORE ~

On December 14th, 2005 another meeting was held at the Cool Creek Nature Center to release the results of the Cool Creek Watershed Study. Representatives of Clark-Dietz, Inc. presented to representatives of the County, the City of Carmel, the Town of Westfield and interested individuals, According to Hamilton County Surveyor,

According to Kenton C. Ward, Hamilton County Surveyor, this study which was part of an EPA Watershed Management Grant began in the early spring of 2005, was aimed at identifying and analyzing stormwater management concerns as a result of the continuing development in the watershed and to provide specific plans to manage stormwater quality for Cool Creek which has been listed by IDEM as an impaired body of water for e-coli.

Among the recommendations of the study was to construct Regional Stormwater Quality facilities that would reduce streambank erosion and reduce non-point source pollutants like e-coli, heavy metals, and nutrients like nitrogen and phosphorous that result from excessive lawn fertilization and agricultural runoff. Other recommendations include public education, stream bank stabilization at several sites, elimination of failing septic systems, adopting a county wide policy of prohibiting construction in floodways, and requiring vegetated buffers along Cool Creek and its tributaries.

If you have any questions, please contact the Hamilton County Surveyor’s Office at 317-776-8495.

HAMILTON COUNTY SURVEYOR'S OFFICE

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Town & Country

Hamilton County Soil & Water Conservation District

Winter 2005

Applications for Cost Share Now Being Accepted

EQIP — Applications for the 2006 **E**nvironmental **Q**uality **I**ncentives **P**rogram (EQIP) are currently being accepted at the Natural Resources Conservation Service. The EQIP program is available to anyone qualifying as a farm. A wide variety of practices are available for cost sharing through the EQIP program. Applications must address environmental concerns determined at the local, state and national levels.

Cost share rates are typically 50% of the actual costs or are set as a flat rate incentive for those practices such as no-till, nutrient management and pest management. Practices must be applied on a planned schedule developed at the time of application. Once an application is accepted and a contract is signed, there is a penalty for not completing all of the planned practices or withdrawing from the contract.

All applications will be ranked on the environmental benefits derived from the contract. The more benefits are derived from the contract and the longer lasting the effects on the environment, the better an application will rank and the better chance for funding. In Indiana, all applications received by the initial cut off date will be ranked together.

Examples of eligible projects might include manure management, filter strips, tree planting, streambank erosion control, and wildlife habitat development. To make an application, contact the local Natural Resources Conservation Service office at 1108 St. 9th street, Noblesville, phone 317/773-2181 Ext. 101.

CREP — Applications are also being accepted for the **C**onservation **R**eserve **E**nhancement **P**rogram which can provide cost share, incentive, and annual rental payments to apply conservation practices on eligible cropland in Hamilton County. These practices include Warm Season Grass Establishment, Hardwood Tree Planting, Permanent Wildlife Habitat, Grass Filter Strips, Riparian Buffers, Wetland Restoration, Bottomland Timber Establishment.

Sign-up for the Indiana CREP went into effect August 1, 2005 and will continue until enrollment goals are attained or through December 31, 2007, whichever comes first. Contact the local Farm Service Agency at 317-773-2181 Ext. 100 for more details or to enroll in the program.

SWCD Cost Share Programs — The Hamilton County SWCD also has a variety of cost share programs available to local residents, including a **well capping program**. Funds are available to assist in the cost of properly capping abandoned wells. The picture shown at the right is of a recent project that utilized these funds. A complete list of the SWCD cost share programs can be found on our web site at www.hamiltonswcd.org, or by calling 317-773-2181 Ext. 101.

Do You Want To Attend The National No-Till Conference ?

The Hamilton County SWCD will pay half the cost of registration for individuals wishing to attend the National No-tillage Conference, which will be held in St. Louis, MO in January 2006. This conference is unparalleled in the U.S. in terms of no-till information and technology. Please call if interested 317-773-2181 Ext. 101.

HAMILTON COUNTY
Soil & Water
CONSERVATION DISTRICT

Town & Country

Published quarterly and distributed to landowners, farm operators, teachers, local agencies, public officials, conservation organizations and other interested individuals.

Personnel Changes — BUSH LEAVING OFFICE

(no not George…John)

John Bush has been the acting District Conservationist for Hamilton Co. since the beginning of August when Aaron Lauster was transferred. John has announced that he is retiring effective the end of 2005.

John has been the District Conservationist in Boone County since the fall of 1976. John started his career with the Soil Conservation Service in 1969 as a student trainee in Vermillion County. During his career he has served in various positions in Vermillion, Delaware, Henry, Hamilton, Parke, Putnam, Howard, Montgomery, Tippecanoe and Fountain counties in Indiana.

After retirement, John intends to do some traveling, continue his hobby of woodworking and working with the 4-H shooting sports program in Boone County as an instructor. He and his brother still have the home farm in Vermillion County which he intends to continue to farm.

The Hamilton County SWCD would like to express our appreciation for John's dedicated service in conservation. His years of experience and knowledge will be hard to replace. Thanks John.

Stream Bank Stabilization Project at Cool Creek Park

Streams and creeks can be a mixed blessing. They are absolutely needed to transport stormwater from our neighborhoods and farmlands to White River. They are also an important component for wildlife habitat and serve as corridors for wildlife movement. What we don't often comprehend is the force, power and persistence of flowing water.

A stream in a stable watershed (a watershed is the contributing land area that creates the water flow) may have little soil erosion for many years. However, large storm events like those experienced in Hamilton County in 2003 and 2004 can cause rapid soil erosion and significant damage to the stream. Major changes in the watershed (increased impervious surface resulting from development) can also cause increased erosion. The Cool Creek watershed is an example of a watershed that is experiencing degradation, and stream bank erosion has become a serious problem.

Hamilton County is hoping to mitigate this environmental damage by proactively addressing the issue through more stringent stormwater management practices and by repairing areas already experiencing degradation. Work is being done on the Cool Creek Watershed Management Plan, which will identify improvements needed to protect the overall health of this important community resource. With the help of Clean Water Indiana funds and the cooperation of the Hamilton County Park and Recreation Department, the Soil and Water Conservation District has already began the repair process by completing a stream bank stabilization project in Cool Creek Park.

The project demonstrates several new products that can be used for stream stabilization and erosion control of the banks. These practices include soil wrapped terraces, locking pavers, riprap, biologs, compost logs, A-jacks, and a concrete mattress.

Project may be viewed on site at Cool Creek Park, or on our web site at www.hamiltonswcd.org. For questions about the project call the SWCD at 773-1101 Ext. 106, and for questions or concerns about the Cool Creek watershed call the Surveyor's office at 776-8495.

APPENDIX H.5

CD WITH PDF FILES OF

STREAM INVENTORY MAPS
NOVEMBER 2003

AND

COOL CREEK WATERSHED
MANAGEMENT PLAN