



CHESAPEAKE BAY NUTRIENT MANAGEMENT STRATEGY

FINAL PHASE II REPORT *APRIL 2009*

Rebecca A. Burke, Chairperson
Ernest P. Larson, Vice Chairman
Jeff C. Wheeland, Secretary
Fred F. Marty, Director of Administration



Delta Development Group, Inc. Leveraging Change





TABLE OF CONTENTS

Forward	1
Introduction and Overview	2
Purpose	2
What is the Chesapeake Bay issue?	2
How is Lycoming County impacted?	3
How is Lycoming County government helping?	3
What are the primary objectives of the Lycoming County CBTS?	4
Why do we need a strategy?	4
Who developed the strategy?.....	5
Who are the stakeholders and how are they involved?	6
What are the strategy’s primary components?	7
The Strategy	12
Responsibilities of Wastewater Treatment Plant Operators	12
Wastewater Treatment Plant/Authority-Specific Recommendations by Phases.....	14
Phase 1: Williamsport Sanitary Authority (WSA).....	15
Phase 1: Montgomery Sewer Authority (Montgomery)	16
Phase 2: Borough of Jersey Shore WWTP (Jersey Shore)	17
Phase 2: Lycoming County Water And Sewer Authority (LCWSA).....	17
Phase 2: Muncy Borough Municipal Authority (Muncy).....	17
Phase 3: Hughesville-Wolf Township Municipal Authority (Hughesville-Wolf).....	18
What should the Point Source Work Group focus on during 2009?	19
Establishing a Lycoming County Nutrient Credit Trading Program	21
Best management practices (BMPs) defined.....	21
No-till agriculture as a BMP	23
Conservation tillage agriculture as a BMP	24
Cover cropping as a BMP	25
Poultry manure export as a BMP	26
Swine manure treatment as a BMP	26
Streambank fencing and off-stream watering as BMPs	27



Defining an agricultural BMP implementation strategy	28
Urban stormwater as BMPs	29
Bioswales and rain gardens as BMPs	29
Impervious surface reduction as a BMP	30
Wet ponds and wetlands as BMPs.....	30
Defining an urban stormwater BMP implementation strategy	30
Stream and floodplain restoration BMPs	31
Defining a floodplain restoration BMP implementation strategy	34
Riparian buffers as BMPs	36
Defining a riparian buffer BMP implementation strategy	37
Land use conversion as a BMP	37
Matching nutrient trading credits with date-specific load reduction requirements.....	38
Who should do what in the Nutrient Credit Trading Program?	39
Paying for a Sustainable Strategy.....	41
What makes a Nutrient Management Strategy sustainable?.....	41
What should the Economic Development and Finance Work Group address in 2009?.....	54
Next Steps	55
Managing the Lycoming County Nutrient Management Strategy.....	55
Objectives for 2009	55
Advisory Committee next steps	56
Advisory Committee roles and responsibilities	57
Point Source Work Group roles and responsibilities	57
Non-Point Source Work Group roles and responsibilities	58
Economic Development and Finance Work Group roles and responsibilities.....	59
Conclusions	61
Potential savings of a Lycoming County-based Nutrient Management Strategy	61
Challenge 101: turning crisis into long-term opportunity	61

Frequently Used Acronyms

Glossary of Terms

Appendices