

RANKIN COUNTY BOARD OF SUPERVISORS

MILL CREEK WATERSHED IMPLEMENTATION PLAN (MCWIP)

PROPOSAL FOR
NON-POINT SOURCE SEDIMENT CONTROL PROJECT
(Section 319h Funding)

PROJECT TITLE: The Mill Creek Watershed Implementation Plan (MCWIP) is sponsored by the Rankin County Board of Supervisors with the intended purpose of formulating a strategic plan for the stabilization of channel inverts and banks along Mill Creek, the reduction of non-point source pollutants (NPSP) throughout the entire Mill Creek watershed, the development of water quality educational programs for citizens within the watershed, and the development of ordinances designed to promote low impact development. The details of the MCWIP will be developed by a Watershed Implementation Team (WIT).

The Non-Point Source Sediment Control Project addresses one component of the MCWIP, that is, the reduction of non-point source (NPS) pollutants, more specifically, sediment, within Mill Creek.

PROJECT ABSTRACT: **The Non-Point Source Sediment Control Project** involves the placement of sedimentation\detention basins throughout the watershed, placed at strategic locations, with the specific intent to reduce the solids (sediment) content entering Mill Creek. The sedimentation\detention basins can accomplish this goal through the direct removal of sediment that appears in the stormwater runoff and by reducing formation of sediment through the reduction in peak flows (and velocities) from significant rainfall events. The preliminary opinion of the total cost of this project is \$1,109,437 (\$665,662 Section 319 Funds, \$443,773 local funds). A preliminary site map of the proposal is included in the application information.

LEAD ORGANIZATION: The lead organization will be the Rankin County Board of Supervisors, 211 East Government Street, Brandon, Mississippi, 39042, telephone (601) 825-1475, facsimile (601) 825-9600.

COOPERATING ORGANIZATIONS: Other organizations expected to be interested in becoming part of the WIT are the City of Flowood, the Castlewood Homeowners Association, Inc., the Mill Creek Homeowners Association, Inc., Castlewood Golf Course, Noranco Utilities, Inc., Langford Water Association, Inc., United States Geological Survey (USGS), The Natural Resources Conservation S (NRCS), The Pearl River Valley Water Supply District (PRVWSD), The Rankin County School District (RCSD), Mississippi Department of Transportation (MDOT), Mississippi Department of Natural Resources, Office of Pollution Control (DEQ, OPC), and various large land owners, and other miscellaneous citizen groups and homeowner associations.

APPLICANT'S FINANCIAL OFFICER: Norman McLeod, County Administrator, 211 East Government Street, Brandon, Mississippi, 39042, telephone (601) 825-1475, facsimile (601) 825-9600.

PROJECT LOCATION: The mouth of the Mill Creek watershed lies on the south side of Pelahatchie Bay in the Ross Barnett Reservoir in Rankin County, Mississippi. The watershed runs southeastward from the reservoir and terminates along Mississippi Hwy 471 approximately north of Brandon. The watershed is bounded on the west by Grants Ferry Road and the east by Mississippi Hwy 471. The watershed consist of approximately 6,250 acres. Areas to be explored for locations of NPS sediment and therefore, sedimentation\detention basins being proposed at this time include all existing developments south and east of Mississippi Hwy 25 and the Castlewood Golf Course.

PROJECT OBJECTIVE: The objective of the MCWIP is to improve water quality in Mill Creek by stabilizing the channel invert and banks along Mill Creek and reducing non-point source pollutants to the creek. The objective of **The Non-Point Source Sediment Control Project** currently being proposed is to reduce non-point source pollutants, specifically solids (sediment), entering Mill Creek (and ultimately the Ross Barnett Reservoir).

PROJECT DESCRIPTION: The MCWIP will be a multi component strategic plan for improving water quality in Mill Creek. The plan will involve the formation of a Watershed Implementation Team (WIT) comprised of various groups interested in improving water quality within Mill Creek. The WIT will develop low impact development plans and ordinances designed to improve water quality by stabilizing physical portions of the creek while also reducing non-point source pollutants, especially sediment. It is believed that sediment is the major non-point source pollutant entering Mill Creek. The major cause of sediment introduction is thought to be development and construction operations. Future development will be controlled through previously developed Phase II regulations. The MCWIP will attempt to address non-point source pollutants contributed by existing conditions. The reduction of non-point source pollutants will be accomplished by various methods but the Best Management Practices (BMP's) outlined in the Mississippi Department of Environmental Quality Manual on Stormwater Management will be used as a guideline. Strategically placed dry sedimentation\detention basins are expected to be instrumental in reducing sediment quantities in Mill Creek. Periodic sampling at various points along the creek will be conducted to measure the success of the sediment reduction project and to identify other pollutants in the creek and help determine the source of those pollutants and possible reduction measures.

Other components of the MCWIP currently under contract include a portion of Mill Creek immediately northwest of Mississippi Hwy 25. The construction contract includes channel invert and bank stabilization with the placement of rip rap stone. The project is being funded through a NRCS grant. Construction is scheduled to begin mid August 2005 and be completed by October 2005. The total cost of the project is \$225,000.

An additional \$750,000 in funding for continued bank and channel invert stabilization is expected in FY 06. Presentations have been made to NRCS and the State's congressional delegation for a total of 5.8 million dollars to complete bank and invert stabilization projects along Mill Creek.

The Non-Point Source Sediment Control Project will evaluate all existing developments, residential and commercial, as well as the Castlewoods Golf Course in an attempt to determine the most feasible location for up to three dry sedimentation\detention basins. The specific intent of the basins will be to reduce the entrance of solids (sediment) into Mill Creek by forming a "calming zone" in the flow pattern allowing heavier material to settle to the bottom of the basin. A secondary benefit of the basins will be the reduction of peak flow during significant rainfall events. The reduction in peak flow will reduce flow velocities and reduce the potential for scour, bank erosion, and invert head cutting.

PROJECT TIMELINE AND PROJECT MILESTONES:

Month 0- Grant Award*

Month 1-2 Organize WIT*

Month 3- Develop criteria for evaluation of existing developments for NPSP contribution

Month 4/5- Evaluate existing developments for NPSP contribution; begin formulation of MCWIP

Month 6- Develop master plan of strategically placed dry sedimentation\detentions basins and prioritize based on cost/benefit; continue formulation of MCWIP

Month 7- Select top three locations and begin negotiation with property owners: continue formulation of MCWIP

Month 8/9- Complete ROW acquisition; Begin design*: continue formulation of MCWIP

Month 9/11- Complete design: continue formulation of MCWIP

Month 12- Advertise project: continue formulation of MCWIP

Month 13- Open bids: continue formulation of MCWIP

Month 14- Issue Notice to Proceed*: continue formulation of MCWIP

Month 15/20- Construction: continue formulation of MCWIP

Month 21- Complete Construction*: continue formulation of MCWIP

*Milestones

MEASURE(S) OF PROJECT SUCCESS: The most direct measure of project success will be the amount of sediment removed from each sedimentation\detention basin during maintenance operations. Baseline turbidity and solids concentrations will be determined and periodic post-project testing will be compared to baseline data to measure project success. Indirect benefits, while not quantitatively measurable, will be the reduction in peak flow during periods of significant rainfall events. This reduction in peak flow will certainly reduce erosion and sediment introduction into Mill Creek.

PROJECT PERIOD: 21 months

BUDGET: Summary

Budget Category	Federal Funds	Local Funds	Total Funds
Project Development	\$ 24,072	\$ 16,048	\$ 40,120
Design Engineering	\$ 37,305	\$ 24,870	\$ 62,175
Environmental	\$ 44,601	\$ 29,734	\$ 74,335
Land Acquisition	\$ 47,916	\$ 31,944	\$ 79,860
Construction	\$ 473,800	\$ 315,867	\$ 789,667
Construction Engineering	\$ 18,228	\$ 12,152	\$ 30,380
On-site Representative	\$ 19,740	\$ 13,160	\$ 32,900
Totals	\$ 665,662	\$ 443,775	\$ 1,109,437

Category Details

Project Development

Position	Hours	Hourly Billing	Total
Administrator	40	\$ 100	\$ 4,000
Supervisor 1	40	\$ 100	\$ 4,000
Supervisor 2	40	\$ 100	\$ 4,000
County Road Manager	24	\$ 100	\$ 2,400
County Engineer 1	80	\$ 135	\$ 10,800
County Engineer 2	120	\$ 115	\$ 13,800
Secretarial	16	\$ 35	\$ 560
Drafting	16	\$ 35	\$ 560
Total			\$ 40,120

Design Engineering

Position	Hours	Hourly Billing	Total
County Engineer	50	\$ 135	\$ 6,750
Project Manager	60	\$ 115	\$ 6,900
Project Engineer	225	\$ 85	\$ 19,125
Drafting	80	\$ 35	\$ 2,800
Secretarial	60	\$ 35	\$ 2,100
Reproduction	1	\$ 500	\$ 500
Data Collection	200	\$ 120	\$ 24,000
Total			\$ 62,175

Environmental

Position	Hours	Hourly Billing	Total
County Engineer	12	\$ 135	\$ 1,620
Project Manager	24	\$ 115	\$ 2,760
Project Engineer	48	\$ 85	\$ 4,080
Drafting	10	\$ 35	\$ 350
Secretarial	15	\$ 35	\$ 525
Environmental Consultant	100	\$ 150	\$ 15,000
Mitigation (Allowance)	1	\$ 50,000	\$ 50,000

Total **\$ 74,335**

Land Acquisition

Position	Hours	Hourly Billing	Total
County Engineer	8	\$ 135	\$ 1,080
Project Manager	8	\$ 115	\$ 920
Project Engineer	36	\$ 85	\$ 3,060
Drafting	24	\$ 35	\$ 840
Secretarial	16	\$ 35	\$ 560
Legal	60	\$ 150	\$ 9,000
Survey	120	\$ 120	\$ 14,400
Land (Allowance)	1	\$ 50,000	\$ 50,000
Total			\$ 79,860

Construction

Item	Quantity	Unit Price	Extension
Mobilization, LS	1	\$ 25,000	\$ 25,000
Clearing/Grubbing, AC	35	\$ 2,000	\$ 70,000
Excavation, CY, FM	282333	\$ 2	\$ 564,667
Outfall Structures, EA	3	\$ 10,000	\$ 30,000
Site Restoration, AC	35	\$ 2,000	\$ 70,000
Rip Rap Stone, Ton	600	\$ 50	\$ 30,000
			\$ -
			\$ -
Total			\$ 789,667

Construction Engineering

Position	Hours	Hourly Billing	Total
County Engineer	40	\$ 135	\$ 5,400
Project Manager	60	\$ 115	\$ 6,900
Project Engineer	120	\$ 85	\$ 10,200
Drafting	40	\$ 35	\$ 1,400
Secretarial	48	\$ 35	\$ 1,680
Survey	40	\$ 120	\$ 4,800
			\$ -
			\$ -
Total			\$ 30,380

On-Site Representative

Position	Hours	Hourly Billing	Total
On-Site Representative, Reg	700	\$ 42	\$ 29,400
On-Site Representative, O.T.	70	\$ 50	\$ 3,500
			\$ -
			\$ -
			\$ -
			\$ -
			\$ -

Total

\$	-
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\$	32,900

Construction excavation quantity based on thirty-five total acres at an average cut of five feet.