APPENDIX C

AGENCY COORDINATION

CITY OF SOUTHAVEN

Top of Mississippi
Office of the Mayor

GREG DAVIS
MAYOR

8710 Northwest Drive
Southaven, MS 38671
Phone: 662.393.6939
Fax: 662.393.7294
mayor@southaven.com

August 26, 2010

Mississippi Emergency Management Agency
Attn: Jana Henderson, MSM
Division Director
Mitigation Grants Bureau
#1 MEMA Drive
Pearl, MS 39208

RE: AUTUMN WOODS DRAINAGE IMPROVEMENTS
MEMA/FEMA, HAZARD MITIGATION GRANT 1604-437
Revision to Letter dated July 2, 1010

Dear Ms. Henderson:

In response to the request from FEMA on August 25, 2010, the City of Southaven is submitting the following as a clarification to referenced letter. The revisions below are to clarify the requested changes to the scope of work for the project and do not modify the project budget of $2,601,990.

The following items are the revised changes to the original scope of work.

1. *Detention Pond Design (original Scope of Work – one detention pond with approximately 64 ac. ft.) (DWG C303 and C304)*
   During the completion of the project design the detention pond was modified to include two detention ponds to reduce the depth of excavation on the site. The ponds were designed north of the subdivision and east of Swinnea Road per the original scope to retain a 100 year storm event. A 3 hour duration storm event was selected as the design event, which is similar to the flooding event of August 2005. The overall detention pond volume was reduced from the original 64 acre ft. to approximately 52 acre ft. This allows for all excavated material to be placed on the project site.

2. *Detention Pond Discharge (original Scope of Work – 2250 feet of 60" or 72", RCP parallel to Swinnea Road to convey the discharge to Rocky Creek) (DWG C301)*
   The cost to construct the pipeline from the detention pond to Rocky Creek would have exceeded the original budget. The depth of bury that would be required for such a pipeline would have been expensive and difficult to construct. Due to the depth the City would have had to acquire many more construction easements adjacent to the Swinnea Road right-of-way. These easements would have been difficult to obtain and might have required a section of Swinnea Road to be reconstructed to install the pipe. The discharge pipe depicted in the contract documents modifies the discharge point to the existing storm drainage pipe in Autumn Woods Subdivision. This

reduces the length of the detention pond discharge pipe to approximately 600 feet. The final design plans include improvements to the existing storm drainage pipe in Autumn Woods Subdivision which ultimately conveys the storm water to Rocky Creek.

3. *Bank Stabilization and Re-Alignment of unnamed tributary of Rocky Creek (DWG C200)*
   The City requests that the proposed bank stabilization along the unnamed tributary of Rocky Creek be included in the project. The original scope of work would have required such work to protect the banks of the creek along Swinnea and Rasco Road from the discharge pipe in the original scope of work. The bank stabilization includes a ditch re-alignment that is needed to protect an existing fire station and Swinnea Road from erosion along the banks of the tributary.

4. *Greenbrook Sub. Discharge (not included in original Scope of Work) (DWG C302)*
   To retain enough water upstream of Autumn Woods Subdivision, additional drainage improvements were required to modify the storm drainage system in Greenbrook Subdivision that were not included in the original scope of work. The discharge pipe from Greenbrook Subdivision was modified in the attached documents to convey the majority of the storm water from the subdivision to the proposed detention ponds. Without such improvements the existing detention pond at Gators Drive overtopped during the 100 year storm event causing potential flooding in Autumn Woods Subdivision. By rerouting the discharge from the subdivision to the detention pond the potential overtopping of Gators Drive was mitigated.

Attached are the remaining correspondence, approvals and permits from the governing agencies. The Corps of Engineers Nationwide Permits and the MS Department of Environmental Quality Storm Water Permit are attached for your records.

We appreciate your assistance in this project. Should you have any questions or comments associated with the final design documents attached here to for your review please contact our City Engineer, Ron Smith, P.E., or our project engineer Neel-Schaffer, Talbert Rea, P.E.

Sincerely,

Charles G. Davis, Mayor
City of Southaven

NEEL-SCHAFFER
Solutions you can build upon

engineers
planners
surveyors
environmental scientists
landscape architects

August 30, 2010
NS #: 00.05845.010

Ron Smith, P.E.
City Engineer and Floodplain Administrator
City of Southaven
8710 Northwest Dr.
Southaven, MS 38671

RE: AUTUMN WOODS DRAINAGE IMPROVEMENTS
CITY OF SOUTHAVEN, MS
FEMA HAZARD MITIGATION GRANT 1604-437
FLOODPLAIN REVIEW

Dear Mr. Smith:

The referenced project includes improvements to an unnamed tributary of Rocky Creek. These improvements are located in Section 29, Township 1 South, Range 7 West, near the intersection of Rasco Road and Swinnea Road in Southaven, MS. The proposed improvements to the creek include a re-alignment of the flow line and stabilization of the banks as depicted in the attached exhibit. The majority of these improvements will be completed within the floodway of Rocky Creek. These improvements were requested by the City of Southaven to protect an existing fire station and Swinnea Road from erosion.

To complete the approval process of the project, FEMA has requested that a No-Rise Certification be submitted to the Floodplain Administrator. In response to this request, we are submitting this letter for your review and approval. We find the project to be minor in nature, which under NFIP Requirements does not warrant an engineering study and certification. The referenced project is more particularly described below:

The re-alignment of the tributary flow line to the south 50 ft. will not alter the length or slope of the creek. The shift south will align the creek with the box culvert under Swinnea Road to protect Swinnea Road and the slopes adjacent the existing fire station. The proposed re-aligned creek cross section will be similar to that of the existing creek. All excavations generated from the re-alignment will be placed in the existing creek thus the volume of the floodplain will not change. The project does not include any land use modifications within the drainage basin and the re-alignment should not significantly alter the travel time of the runoff. The peak discharge and timing of the peak discharge from the basin should not be significantly altered. The proposed work has been permitted by the Corps of Engineers under a Nationwide Permit 43 as maintenance to a Storm water Management Facility.

5740 Getwell Road, Building 2, Southaven, MS 38672, 662.890.6404, Fax 662.890.6407

Based on the scope of the project we expect the project not to create any rise in the existing floodplain elevations. If you are in agreement, we request your concurrence with our opinion for submission to governing agencies.

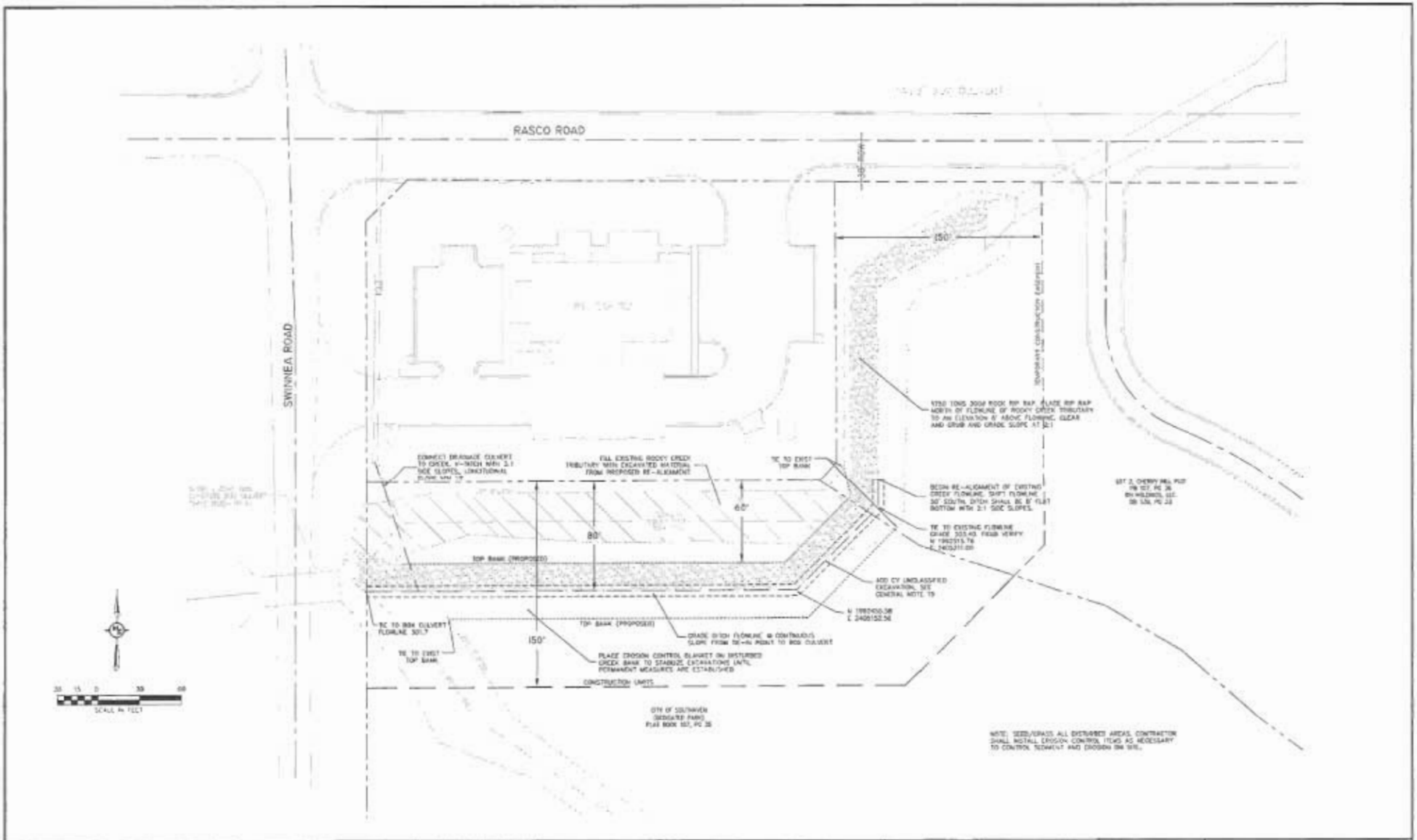
If you have any further comments or questions regarding this matter, please call 662-890-6404. We appreciate your assistance.

Sincerely,

NEEL-SCHAFFER, INC.

John Talbert Rea, P.E.
Project Engineer

Enclosure



NOTICE TO DRAWING HOLDER	REVISIONS			DRAWING INFORMATION	
NEEL-SCHAFFER, INC., HEREINAFTER REFERRED TO AS THE ENGINEER HAS PREPARED AND FURNISHED THIS DRAWING TO THE OWNER FOR USE ON THIS PROJECT ONLY. THIS DRAWING SHOULD NOT BE USED ON EXTENSIONS OF THIS PROJECT OR ON ANY OTHER PROJECT. ANY REUSE OF THIS DRAWING, WITHOUT WRITTEN VERIFICATION OR ADAPTATION BY THE ENGINEER, SHALL BE AT THE REUSER'S SOLE RISK AND THE REUSER SHALL INDEMNIFY AND HOLD HARMLESS THE ENGINEER FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES, INCLUDING ATTORNEY'S FEES ARISING OUT OF OR		BY	DESCRIPTION	N-S PROJECT NO.: 00-0004-015	
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CITY OF SOUTHAVEN
DRAINAGE IMPROVEMENTS
AUTUMN WOODS SUBDIVISION

HAZARD MITIGATION GRANT NO. 1604-437

NEEL-SCHAFFER
Solutions you can build upon

DITCH BANK STABILIZATION
ROCKY CREEK TRIBUTARY

DRAWING NUMBER: C000

CITY OF SOUTHAVEN

At The Top Of Mississippi

RON SMITH, P.E.
CITY ENGINEER

8710 NORTHWEST DRIVE
SOUTHAVEN, MS 38671
662-393-2991

September 2, 2010

John Talbert Rea, P.E.
Project Engineer—Neel-Schaffer, Inc.
5740 Getwell Road
Bldg. 2
Southaven, MS. 38672

Re: Autumn Woods Drainage Improvements
City of Southaven, MS.
FEMA Hazard Mitigation Grant 1604-437
Floodplain Review—August 30, 2010

Dear Mr. Rea:

I have reviewed the submitted *No-Rise Certification* for the above referenced project. I am in agreement with your determination that no additional fill will be added to the existing Floodway cross-section. It also appears that minimum, if any, changes will be made to flow characteristics of the channel. Therefore, based on these observations, I concur with your determination that *No-Rise* should be expected within the Floodway.

Sincerely,
City of Southaven, Mississippi

Ronald E. Smith, PE / PLS
City Engineer / Floodplain Administrator

DEPARTMENT OF THE ARMY
MEMPHIS DISTRICT, CORPS OF ENGINEERS
167 NORTH MAIN STREET B-202
MEMPHIS, TENNESSEE 38103-1894

July 1, 2010

REPLY TO
ATTENTION OF:

Regulatory Branch

RECEIVED
JUL 06 2010
NEEL-SCHAFFER, INC.
SOUTHAVEN, MS

Mr. John Talbert Rea, P.E.
Neel-Schaffer, Inc.
5740 Getwell Road, Building 2
Southaven, Mississippi 38672

Dear Mr. Rea:

This is in reference to your recent request on behalf of the City of Southaven, regarding their proposal to construct drainage improvements for the Autumn Woods subdivision. The project would involve outfall structures along Rocky Creek and the realignment of an unnamed tributary. The project is located near the intersection of Rasco Road and Swinnea Road (as shown on the enclosed maps).

It is our preliminary jurisdictional determination (PJD) that this tributary and Rocky Creek are considered to be waters of the United States. A PJD cannot be appealed. If you object to this PJD, please contact us for information about receiving an approved jurisdictional determination and information on the administrative appeals process. The PJD is included for your concurrence. If you agree with this PJD please sign the form and return it to the address listed above. If the PJD is not returned within 30 days of the date of this letter we will assume your concurrence.

As proposed, we believe the project meets the criteria of both Nationwide Permit (NWP) 7 and 43 (Outfall Structures and Associated Intake Structures and Storm Water Management Facilities). No impacts to Federally listed threatened or endangered species are expected to occur. The attached regional conditions, general conditions and special conditions must be met. Note specifically General Conditions 17 and 18, concerning endangered species and historic properties. If all conditions cannot be met, an individual permit may be required.

This verification is valid until the NWP is modified, reissued, or revoked. All of the existing NWPs are scheduled to be modified, reissued, or revoked prior to March 18, 2012. It is incumbent upon you to remain informed of changes to the NWPs. We will issue a public notice when the NWPs are reissued. Furthermore, if you commence or are under contract to commence this activity before the date that the relevant nationwide permit is modified or revoked, you will have twelve (12) months from the date of the modification or revocation of the NWP to complete the activity under the present terms and conditions of this nationwide permit.

This permit conveys no property rights, either in real estate or material, or any exclusive privileges. Furthermore, no injury to property or invasion of rights or any infringement of Federal, state, or local laws or regulations is authorized. The decision regarding this action is based on information found in the administrative record that documents the District's decision-making process, the basis for the decision, and the final decision.

Regulations require that the Memphis District be informed of the completion date so that a compliance inspection can be scheduled. Please complete and return the enclosed "Certificate of Compliance" within 30 days of the completion of this project.

The Memphis District Regulatory Branch is committed to providing quality and timely service to our customers. In an effort to improve customer service, please take a moment to complete the enclosed survey post card and return it or go to our customer service survey found on our website at http://per2.nwp.usace.army.mil.html. Your comments, positive or negative, will not affect any current or future dealings with the Corps of Engineers.

If you have questions, please contact Joe Brougher at (901) 544-3472 and refer to File No. MVM-2009-379.

Sincerely,

Roger Allen

for Tim H. Flinn, P.E.
Eastern Section Chief
Regulatory Branch

Enclosures

MVM 2009-379
Viciinity Map

0 0.25 0.5 1 Miles

Regional Condition for 2007 NWP No. 43
Storm Water Management Facilities,

This NWP is authorized by this certification for a period of five years from its effective date, provided the projects comply with the following conditions:

a. Intermittent stream impacts in excess of 300 linear feet shall not be authorized by this certification.

b. This certification shall not authorize in-stream treatment of stormwater.

c. For discharges of dredged or fill materials associated with the construction of a residence or place where people are employed or congregate, the applicant should provide documentation that the residence or establishment can make a connection to an existing MDEQ approved central sewage collection and treatment system or provide a State Department of Health Soil and Site Evaluation System/Recommendation for an individual wastewater disposal system.

d. In cases where a pre-construction notification is required, a preconstruction notification shall be provided to MDEQ for projects that include channel work within a Monitored waterway of the Mississippi 303(d) waters listed for sediment or biological impairment or waterways with a completed Total Maximum Daily Load (TMDL) for sediment or biological impairment. This notification shall include the following:

   1) Justification of why the impacts cannot be avoided;
   2) Proposed best management practices that would minimize the impacts to receiving sensitive waters;
   3) Compensatory mitigation primarily along the same reach of stream or on another impaired stream within the same drainage basin.

e. The applicant shall obtain coverage under the State's Storm Water Construction General Permit (MSR10) in order to discharge storm water associated with construction activity including clearing, grading, excavation, and other land disturbance activity disturbing one or more acres

REGIONAL CONDITIONS FOR WATER QUALITY CERTIFICATION

NWPs 3, 4, 5, 6, 7, 11, 13, 15, 16, 17, 19, 20, 22, 23, 25, 30, 32, 33, 34, 37, 38, 45, 46, 47, 48, 49, and 50 - The Mississippi Department of Environmental Quality (DEQ) issued water quality certification for these Nationwide Permits for a period of five years from its effective date, provided the projects comply with the following conditions: *(Note: Nationwide Permit Nos. 1, 2, 8, 9, 10, 11, 24, 28, and 35 are not listed because they do not authorize section 404 regulated discharges and therefore do not require 401 WQCs).* DEQ will be the primary responsible party for the enforcement of the water quality certification conditions listed below and may be contacted as follows:

Mississippi Department of Environmental Quality
Office of Pollution Control
Post Office Box 10385
Jackson, Mississippi 39289-0385
Telephone: (601) 961-5171

a. For discharges of dredged or fill materials associated with the construction of a residence or place where people are employed or congregate, the applicant should provide documentation that the residence or establishment can make a connection to an existing MDEQ approved central sewage collection and treatment system or provide a State Department of Health Soil and Site Evaluation System/Recommendation for an individual wastewater disposal system.

b. The applicant shall obtain coverage under the State's Storm Water Construction General Permit (MSR10) in order to discharge storm water associated with construction activity disturbing one or more acres.

c. No sewage, oil, refuse, or other pollutants shall be discharged into the watercourse.

d. The turbidity outside the limits of a 750-foot mixing zone shall not exceed the ambient turbidity by more than 50-Nephelometric Turbidity Units.

CERTIFICATE OF COMPLIANCE

File: MVM-2009-379 (jfb)

Name of Permittee: City of Southaven Lake (c/o Neel-Schaffer, Inc.)

Date of Issuance: July 1, 2010

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the following address:

Regulatory Branch
Corps of Engineers Memphis District
167 N Main Street Room B202
Memphis, TN 38103-1894

Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above referenced permit has been completed in accordance with the terms and conditions of the said permit, and required mitigation (if needed) was completed in accordance with the permit conditions.

_____

Signature of Permittee

43. Storm water Management Facilities. Discharges of dredged or fill material into non-tidal waters of the United States for the construction and maintenance of storm water management facilities, including the excavation of storm water ponds/facilities, detention basins, and retention basins; the installation and maintenance of water control structures, outfall structures and emergency spillways; and the maintenance dredging of existing storm water management ponds/facilities and detention and retention basins.

The discharge must not cause the loss of greater than 1/2-acre of non-tidal waters of the United States, including the loss of no more than 300 linear feet of stream bed, unless for intermittent and ephemeral stream beds this 300 linear foot limit is waived in writing by the district engineer. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters. This NWP does not authorize discharges of dredged or fill material for the construction of new storm water management facilities in perennial streams.

Notification: For the construction of new storm water management facilities, or the expansion of existing storm water management facilities, the permittee must submit a pre-construction notification to the district engineer prior to commencing the activity. (See general condition 27.) Maintenance activities do not require pre-construction notification if they are limited to restoring the original design capacities of the storm water management facility. (Section 404)

7. Outfall Structures and Associated Intake Structures. Activities related to the construction or modification of outfall structures and associated intake structures, where the effluent from the outfall is authorized, conditionally authorized, or specifically exempted by, or that are otherwise in compliance with regulations issued under the National Pollutant Discharge Elimination System Program (Section 402 of the Clean Water Act). The construction of intake structures is not authorized by this NWP, unless they are directly associated with an authorized outfall structure.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity. (See general condition 27.) (Sections 10 and 404)

C. Nationwide Permit General Conditions

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as appropriate, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP.

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. Culverts placed in streams must be installed to maintain low flow conditions.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety.

15. Wild and Scenic Rivers. No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency in the area (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

16. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

17. Endangered Species. (a) No activity is authorized under any NWP which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

(c) Non-federal permittees shall notify the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that may be affected by the proposed work or that utilize the designated critical habitat that may be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.

(e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. FWS or the NMFS, both lethal and non-lethal "takes" of protected species are in violation of the ESA. Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide Web pages at http://www.fws.gov/ and http://www.noaa.gov/fisheries.html respectively.

18. Historic Properties. (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

(d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed.

(e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, explaining the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

19. Designated Critical Resource Waters. Critical resource waters include, NOAA-designated marine sanctuaries, National Estuarine Research Reserves, state natural heritage sites, and outstanding national resource waters or other waters officially designated by a state as having particular environmental or ecological significance and identified by the district engineer after notice and opportunity for public comment. The district engineer may also designate additional critical resource waters after notice and opportunity for comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, and 50 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 27, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

20. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10 acre and require pre-construction notification, unless the district engineer determines in writing that some other form of mitigation would be more environmentally appropriate and provides a project-specific waiver of this requirement. For wetland losses of 1/10 acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream restoration, to ensure that the activity results in minimal adverse effects on the aquatic environment.

(e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2 acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2 acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee arrangements or separate activity-specific compensatory mitigation. In all cases, the mitigation provisions will specify the party responsible for accomplishing and/or complying with the mitigation plan.

(h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

21. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

22. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

23. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

24. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

25. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature: "When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

_____

(Transferee)

_____

(Date)

26. Compliance Certification. Each permittee who received an NWP verification from the Corps must submit a signed certification regarding the completed work and any required mitigation. The certification form must be forwarded by the Corps with the NWP verification letter and will include:

(a) A statement that the authorized work was done in accordance with the NWP authorization, including any general or specific conditions;

(b) A statement that any required mitigation was completed in accordance with the permit conditions; and

(c) The signature of the permittee certifying the completion of the work and mitigation.

27. Pre-Construction Notification. (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, as a general rule, will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) Forty-five calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 17 that listed species or critical habitat might affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 18 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) is completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee cannot begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed project;

(3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided result in a quicker decision.);

(4) The PCN must include a delineation of special aquatic sites and other waters of the United States on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters of the United States, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, where appropriate;

(5) If the proposed activity will result in the loss of greater than 1/10 acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and

(7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

(2) For all NWP 48 activities requiring pre-construction notification and for other NWP activities requiring pre-construction notification to the district engineer that result in the loss of greater than 1/2-acre of waters of the United States, the district engineer will immediately provide (e.g., via facsimile transmission, overnight mail, or other expeditious manner) a copy of the PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will then have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame, but will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(4) Applicants are encouraged to provide the Corps multiple copies of pre-construction notifications to expedite agency coordination.

(5) For NWP 48 activities that require reporting, the district engineer will provide a copy of each report within 10 calendar days of receipt to the appropriate regional office of the NMFS.

(e) District Engineer's Decision: In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest.

If the proposed activity requires a PCN and will result in a loss of greater than 1/10 acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for projects with smaller impacts. The district engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed work are minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the district engineer will notify the permittee and include any conditions the district engineer deems necessary. The district engineer must approve any compensatory mitigation proposal before the permittee commences work. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the district engineer to be minimal, the district engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP.

If the district engineer determines that the adverse effects of the proposed work are more than minimal, then the district engineer will notify the applicant either: (1) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (2) that the project is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level; or (3) that the project is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period. The authorization will include the necessary conceptual or specific mitigation or a requirement that the applicant submit a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level. When mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan.

28. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

D. Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project.

E. Definitions

Best management practices (BMPs): Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

Compensatory mitigation: The restoration, establishment (creation), enhancement, or preservation of aquatic resources for the purpose of compensating for unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Discharge: The term "discharge" means any discharge of dredged or fill material.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Ephemeral stream: An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete project in the Corps regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Intermittent stream: An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

Loss of waters of the United States: Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to jurisdictional waters for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. The loss of stream bed includes the linear feet of stream bed that is filled or excavated. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities eligible for exemptions under Section 404(f) of the Clean Water Act are not considered when calculating the loss of waters of the United States.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. The definition of a wetland can be found at 33 CFR 328.3(b). Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the NWPs, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of standing or flowing water

is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of "open waters" include rivers, streams, lakes, and ponds.

Ordinary High Water Mark: An ordinary high water mark is a line on the shore established by the fluctuations of water and indicated by physical characteristics, or by other appropriate means that consider the characteristics of the surrounding areas (see 33 CFR 328.3(e)).

Perennial stream: A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a course substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands adjacent to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects waterbodies with their adjacent uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 20.)

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Single and complete project: The term "single and complete project" is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete project must have independent utility (see definition). For linear projects, a "single and complete project" is all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single waterbody several times at separate and distant locations, each crossing is considered a single and complete project. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream's course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Tidal wetland: A tidal wetland is a wetland (i.e., water of the United States) that is inundated by tidal waters. The definitions of a wetland and tidal waters can be found at 33 CFR 328.3(b) and 33 CFR 328.3(f), respectively. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line, which is defined at 33 CFR 328.3(d).

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the NWPs, a waterbody is a jurisdictional water of the United States that, during a year with normal patterns of precipitation, has water flowing or standing above ground to the extent that an ordinary high water mark (OHWM) or other indicators of jurisdiction can be determined, as well as any wetland area (see 33 CFR 328.3(b)). If a jurisdictional wetland is adjacent--meaning bordering, contiguous, or neighboring--to a jurisdictional waterbody displaying an OHWM or other indicators of jurisdiction, that waterbody and its adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)). Examples of "waterbodies" include streams, rivers, lakes, ponds, and wetlands.

Building Strong for America

US Army Corps of Engineers®

We would appreciate you taking a minute to answer these 5 questions about your experience with our Regulatory Program. The information will be used to help us improve our processes and our customer service. **Thank you!**

Please rate on a 1-5 scale, 5=High Satisfaction, 3=Average, 1=Low Satisfaction (circle below)

1. Did the Corps representative act professionally and treat you with courtesy? **1 2 3 4 5 N/A**
2. Did the Corps provide sufficient information to allow you to complete an application form, comment on public notice, or otherwise evaluate our work? **1 2 3 4 5 N/A**
3. Did the Corps respond to your letters and telephone calls in a reasonable amount of time? **1 2 3 4 5 N/A**
4. Did the Corps representative answer your questions clearly, giving you accurate information about our Regulatory Program? **1 2 3 4 5 N/A**
5. What is your OVERALL rating of the level of service provided by the Corps of Engineers Regulatory Program? **1 2 3 4 5 N/A**

Please return this postage paid card to us after completion.

Other comments are welcome: _____

CEMVM FL1150
Sep 2008

MVM -2009- 379 - JFB (NWP)

Proponent
CEMVM-OD-R

State of Mississippi
Department of Environmental Quality
Office of Pollution Control

Certificate of Permit Coverage

under Mississippi's Large Construction Storm Water General NPDES Permit

Be it known

City of Southaven
Southaven, Mississippi

having submitted an acceptable Construction Notice of Intent, is hereby granted this Certificate of Permit Coverage in order to discharge storm water associated with the construction of

Southaven, City of, Autumn Woods Drainage Improvements
Receiving Stream: Rocky Creek
DeSoto County

Chief, General Permits Branch

Coverage No: MSR105770
Date of Coverage: July 7, 2010
Date Coverage Expires: May 31, 2010

53611 GNP20100001

5845-010

AI #53611
GMP2010001

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

RECEIVED
JUN 21 2010
Dept of Environmental Quality
Office of Pollution Control

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY (MDEQ)
LARGE CONSTRUCTION NOTICE OF INTENT (LCNOI)
FOR COVERAGE UNDER THE LARGE CONSTRUCTION STORM WATER GENERAL NPDES PERMIT MSR10 5770
(NUMBER TO BE ASSIGNED BY STATE)

INSTRUCTIONS

The Large Construction Notice of Intent (LCNOI) is for coverage under the Large Construction Storm Water General Permit for land disturbing activities of five (5) acres or greater; or for land disturbing activities that are part of a larger common plan of development or sale that will disturb five (5) or more acres. Applicant must be owner or operator. For construction activities, the operator is typically the prime contractor. The owner(s) of the property and the prime contractor associated with regulated construction activity on the property have joint and several responsibility for compliance with the Large Construction Storm Water General Permit MSR10.

File at least thirty (30) days prior to the commencement of construction, fifteen (15) days if a Storm Water Pollution Prevention Plan (SWPPP) is already on file. Discharge of storm water from a "large" construction site without written notification of coverage is a violation of state law.

Submittals with this LCNOI must include:

- **A Storm Water Pollution Prevention Plan as described in the Large Construction Storm Water General Permit**
- **A USGS quad map or a copy showing site location**

Additional submittals may include the following if applicable:

- **Appropriate Section 404 documentation**
- **Appropriate sanitary sewage collection and disposal documentation**
- **Appropriate dam construction and low flow requirement documentation**

ALL INFOMATION MUST BE COMPLETED (Put "NA" if the not applicable)

IS APPLICANT THE OWNER OR PRIME CONTRACTOR? (CIRCLE ONE OR BOTH)

OWNER INFORMATION

OWNER CONTACT PERSON: Ron Smith, City Engineer

OWNER COMPANY NAME: City of Southaven

OWNER STREET OR P.O. BOX: 8710 Northwest Drive

OWNER CITY: Southaven STATE: MS ZIP: 38671

OWNER PHONE # (INCLUDE AREA CODE): 662393-0111

PRIME CONTRACTOR INFORMATION

PRIME CONTRACTOR CONTACT PERSON: TBD

PRIME CONTRACTOR COMPANY: _____

PRIME CONTRACTOR STREET OR P.O. BOX: _____

PRIME CONTRACTOR CITY: _____ STATE: _____ ZIP: _____

PRIME CONTRACTOR PHONE # (INCLUDE AREA CODE): _____

PROJECT INFORMATION

PROJECT NAME: Autumn Woods Drainage Improvements

TOTAL ACREAGE THAT WILL BE DISTURBED[1] (To be covered by the Large Construction General Permit the disturbed area must be five (5) acres or greater; or land disturbing activities that are part of a larger common plan of development or sale that will disturb five (5) acres or greater.) 25

IS THIS PART OF A LARGER COMMON PLAN OF DEVELOPMENT (Yes or No)? no

IF YES, NAME OF LARGER COMMON PLAN OF DEVELOPMENT: _____

_____ AND PERMIT COVERAGE NUMBER: _____

DESCRIPTION OF CONSTRUCTION ACTIVITY: Drainage System Improvements and Detention Ponds

_____

PROPOSED DESCRIPTION OF PROPERTY USE AFTER CONSTRUCTION HAS BEEN COMPLETED (include standard industrial classification code (SIC) if known): Drainage System

_____ SIC Code ___ ___ ___ ___

PHYSICAL SITE ADDRESS (If the physical address is not available indicate the nearest named road. For linear projects, indicate the beginning of the project and identify all counties the project traverses.)

STREET: Swinnea Road and Rasco Road Intersection

CITY: Southaven COUNTY: DeSoto

ZIP: 38671

LATITUDE (Optional): _____ LONGITUDE (Optional): _____

METHOD USED TO DETERMINE LAT & LONG (GPS *(Please GPS Construction Entrance)* or Map Interpolation): _____

NEAREST NAMED RECEIVING STREAM: Rocky Creek

ARE THERE RECREATIONAL STREAMS, PRIVATE/PUBLIC PONDS OR LAKES WITHIN ½ MILE DOWNSTREAM OF PROJECT BOUNDRY THAT MAY BE IMPACTED BY THE CONSTRUCTION ACTIVITY? Rocky Creek

EXISTING DATA DESCRIBING THE SOIL (for linear projects please describe in SWPPP): See SWPPP

_____

[1]Acreage for subdivision development includes areas disturbed by construction of roads, utilities and drainage. Additionally, a housesite of at least 10,000 ft^2 per lot (entire lot, if smaller) shall be included in calculating acreage disturbed.

DOCUMENTATION OF COMPLIANCE WITH OTHER REGULATIONS/REQUIREMENTS

COVERAGE UNDER THIS PERMIT WILL NOT BE GRANTED UNTIL ALL OTHER REQUIRED MDEQ PERMITS AND APPROVALS ARE SATISFACTORILY ADDRESSED

IS THIS LCNOI FOR A FACILITY THAT WILL REQUIRE OTHER PERMITS (Yes or No)? Yes.

IF YES, CIRCLE WHICH ONE(S): AIR, HAZARDOUS WASTE, PRETREATMENT, WATER STATE OPERATING, INDIVIDUAL NPDES, OTHER: Nationwide 404 Permit from the Corp of Engineers

IS THE PROJECT REROUTING, FILLING OR CROSSING A WATER CONVEYANCE OF ANY KIND (Yes or No)? Yes. **(If yes, contact the U.S. Army Corps of Engineers' Regulatory Branch for permitting requirements).**

IF THE PROJECT REQUIRES A CORPS OF ENGINEER SECTION 404 PERMIT, PROVIDE APPROPRIATE DOCUMENTATION WITH THIS LCNOI THAT:

- **The project has been approved by individual permit, or**
- **The work will be covered by a nationwide permit and NO NOTIFICATION to the Corps is required, or**
- **The work will be covered by a nationwide or general permit and NOTIFICATION to the Corps is required**

IS A LAKE REQUIRING THE CONSTRUCTION OF A DAM BEING PROPOSED (Yes or No)? No
IF YES, PROVIDE APPROPRIATE APPROVAL DOCUMENTATION FROM MDEQ OFFICE OF LAND AND WATER, DAM SAFETY.

IF THE PROJECT IS A SUBDIVISION, INDUSTRIAL PARK, OR LARGE APARTMENT COMPLEX, HOW WILL SANITARY SEWAGE BE DISPOSED? Circle one of the following and attach the pertinent documents.

1. **Existing Municipal or Commercial System. Please attach plans and specifications for the collection system and the associated "Information Regarding Proposed Wastewater Projects" form. If the plans and specifications can not be provided at the time of LCNOI submittal, the MDEQ will accept written acknowledgement from official(s) responsible for wastewater collection and treatment that the flows generated from the proposed project can and will be transported and treated properly. The letter must include the estimated flow.**
2. **Collection and Treatment System will be Constructed. Please attach a copy of the cover of the NPDES discharge permit from the MDEQ or indicate the date the application was submitted to the MDEQ. Date: _____**
3. **Individual Onsite Wastewater Disposal Systems for Subdivisions Less than 35 Lots. Please attach a copy of the Letter of General Acceptance from the Mississippi State Department of Health or certification from a registered professional engineer that the platted lots should support individual onsite wastewater disposal systems.**
4. **Individual Onsite Wastewater Disposal Systems for Subdivisions Greater than 35 Lots. A determination of the feasibility of installing a central sewage collection and treatment system must be made by the MDEQ. A copy of the response from the MDEQ concerning the feasibility study must be attached. If a central collection and wastewater system is not feasible, then please attach a copy of the Letter of General Acceptance from the State Department of Health or certification from a registered professional engineer that the platted lots should support individual onsite wastewater disposal systems.**

INDICATE ANY LOCAL STORM WATER ORDINANCE WITH WHICH THE PROJECT MUST COMPLY:

_____

_____

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND USGS QUAD MAP REQUIREMENT

ATTACH A CONSTRUCTION SWPPP THAT INCLUDES THE MINIMUM COMPONENTS FOUND IN THE LARGE CONSTRUCTION STORM WATER GENERAL PERMIT.

INDICATE ANY ASSOCIATION OR GENERIC SWPPP (In addition, attach a site map with the appropriate erosion and sediment controls identified. For linear projects such as roads and pipelines provide drawings of typical controls:

_____

_____

ATTACH A USGS QUAD MAP OR COPY OF QUAD MAP EXTENDING AT LEAST 1/2 MILE BEYOND THE SITE'S PROPERTY BOUNDRY OUTLINING THE SITE LOCATION (Quad maps can be obtained from MDEQ Office of Geology at 601-961-5523.) IF A COPY IS SUBMITTED PROVIDE THE NAME OF THE QUAD MAP (found in upper right hand corner of map).

Pleasant Hill and Horn Lake Quads

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Ronald E. Smith
Signature[1] (Must be signed by operator when different than owner)

June 17, 2010
Date

Ronald E. Smith
Printed Name[1]

City Engineer
Title

[1]This application shall be signed as follows:
- **For a corporation, by a responsible corporate officer;**
- **For a partnership, by a general partner;**
- **For a sole proprietorship, by the proprietor;**
- **For a municipal, state or other public facility, by principal executive officer, mayor, or ranking elected official;**
- **Duly Authorized Representative.**

Please submit this LCNOI form to:

Chief, Environmental Permits Division
MS Department of Environmental Quality, Office of Pollution Control
P.O. Box 10385
Jackson, Mississippi 39289-0385

PRIME CONTRACTOR CERTIFICATION

By completing and submitting this form to the MDEQ, the prime contractor is certifying that (1) they have operational control over the erosion and sediment control specifications (including the ability to make modifications to such specifications) and (2) has day-to-day operational control of those activities at the site necessary to ensure compliance with the SWPPP and applicable permit conditions. The owner(s) of the property and the prime contractor associated with regulated construction activity on the property have joint and several responsibility for compliance with the permit. Notwithstanding any permit condition to the contrary, the coverage recipient and any person who causes pollution of waters of the state or places waste in a location where they are likely to cause pollution of any waters of the state shall remain responsible under applicable federal and state laws and regulations and applicable permits.

PRIME CONTRACTOR INFORMATION

PRIME CONTRACTOR CONTACT PERSON: _____ PHONE NUMBER: (___)_____

PRIME CONTRACTOR COMPANY: _____

PRIME CONTRACTOR STREET OR P.O. BOX: _____

PRIME CONTRACTOR CITY: _____ STATE: _____ ZIP: _____

OWNER INFORMATION

OWNER CONTACT PERSON: _____ PHONE NUMBER: (___)_____

OWNER COMPANY NAME: _____

PROJECT INFORMATION

CONSTRUCTION STORM WATER GENERAL PERMIT COVERAGE NUMBER (Found on Certificate of Coverage):

MSR10 __ __ __ __

PROJECT NAME: _____

DESCRIPTION OF CONSTRUCTION ACTIVITY: _____

_____

PHYSICAL SITE ADDRESS (If the physical address is not available indicate the nearest named road. For linear projects, indicate the beginning of the project and identify all counties the project traverses.)

STREET: _____

CITY: _____ COUNTY: _____

I certify that I am the prime contractor for this project and will comply with all the applicable requirements in the above referenced general NPDES permit. I further certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____ _____

Prime Contractor Signature[1] Date

_____ _____

Printed Name[1] Title

[1]This application shall be signed as follows:
- For a corporation, by a responsible corporate officer;
- For a partnership, by a general partner;
- For a sole proprietorship, by the proprietor;
- For a municipal, state or other public facility, by principal executive officer, mayor, or ranking elected official;
- Duly Authorized Representative.

This Prime Contractor Certification form shall be submitted to:

Chief, Environmental Permits Division
MS Department of Environmental Quality, Office of Pollution Control
P.O. Box 10385
Jackson, Mississippi 39289-0385

URS

November 1, 2010

Mr. James D. Giattina
Director
U.S. Environmental Protection Agency, Region 4
Water Management Division
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303-8960

Re: Request for Project Review –City of Southaven, MS Autumn Woods Drainage Improvement Project - Revised Project Scope of Work

Dear Mr. Giattina:

The City of Southaven, Mississippi has applied for Federal funding under the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Grant Program for improvements to drainage infrastructure in the vicinity of the Autumn Woods subdivision. URS Group, Inc. (URS) was retained by FEMA to prepare an Environmental Assessment for the proposed Autumn Woods Drainage Improvement Project (Project) that was finalized with a Finding of No Significant Impact in March of 2010. In development of the EA, an agency consultation letter was submitted to your agency on July 20, 2009 requesting a project review. Mr. Heinz Mueller provided comments on behalf of the Environmental Protection Agency for the original scope of work; copies of the correspondence are attached for your reference.

In a letter to the Mississippi Emergency Management Agency (MEMA), dated July 2, 2010, the City of Southaven requested several modifications to the original approved scope of work that are necessary to satisfy the overall objective of the Project's purpose and need. Modifications to the original scope of work include the following:

- **Autumn Woods Drainage and Discharge Modifications** – The original scope of work included the installation of two 700-foot-long storm drainage pipes along Autumn Woods Drive and Long Branch Drive, which would have extended southwest across Rasco Road into Rocky Creek. The revised scope includes the installation of approximately 800 feet and 1,000 feet of reinforced concrete pipe (RCP) would along Autumn Woods Drive and Long Branch Drive, respectively. In addition, approximately 240 feet of RCP would be installed along Acorn Cove which would tie in to the Long Branch Drive drainage line. The Autumn Wood Drive and Long Branch Drive pipes would extend southwest across Rasco Road where they would discharge to outfall structures adjacent to Rocky Creek. Construction of the outfall structures for the Autumn Woods Drive and Long Branch Drive drainage lines would include the excavation of two 4-foot wide open drainage ditches, approximately 300-feet and 120-feet long, respectively, which would extend and discharge to Rocky Creek. Rip-rap would be installed at the drainage line outlets to minimize erosion within the drainage ditches. In addition to the new construction, proposed improvements to the existing Autumn Woods drainage system include the repair of rusted or damaged portions of the existing corrugated metal drainage pipes, and the plugging and filling of sections of drainage system that will no longer be utilized.

- **Detention Pond Redesign** – The proposed Swinnea Road detention pond design would be modified from a single detention pond to two shallower detention ponds to reduce the overall depth of excavation on the site. The detention pond was originally designed to retain a 100-year storm event.

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Houston, Texas 77042
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A 3-hour duration storm event was selected as the design event, which is similar to the flooding event of August 2005. The overall detention pond volume was reduced from the original 64 acre-feet to approximately 52 acre-feet. This modification would allow for all excavated material to be placed on the project site.

- **Detention Pond Discharge** –The proposed 60- to 72-inch discharge pipe along Swinnea Road would be removed from consideration and the detention pond discharge redirected to the storm drainage infrastructure in the Autumn Woods subdivision. The proposed improvements to the Autumn Woods subdivision drainage pipes would provide sufficient capacity to convey the stormwater from the detention pond to Rocky Creek.

- **Greenbrook Subdivision Discharge** – To retain enough water upstream of the Autumn Woods Subdivision, additional drainage improvements would be required to modify the storm drainage system in the Greenbrook Subdivision. The discharge pipe from the Greenbrook Subdivision would be modified to convey the majority of the subdivision's stormwater to the proposed detention ponds. Without such improvements, the existing detention pond at Gators Drive would overtop during a 100-year storm event resulting in the potential for additional flooding in the Autumn Woods Subdivision.

- **Re-alignment and bank stabilization of the Rocky Creek Tributary** – The original scope of work proposed minor creek improvements and bank stabilization activities, including the installation of rip-rap, to minimize erosion and scouring within Rocky Creek. Additional modifications are now proposed to protect an adjacent fire station from stream bank erosion and Swinnea Road from undermining. The revised project would relocate approximately 410-feet of the tributary approximately 50 feet south, aligning the tributary with the Swinnea Road culvert. The proposed re-alignment would construct an 8-foot wide flat bottom channel with 2:1 side slopes. Material excavated to construct the new channel would be used to fill the existing channel. Rip-rap would be installed along approximately 600-feet of the realigned channel for armoring.

URS Group, Inc. (URS) has been retained by FEMA to prepare the Supplemental EA for the proposed Autumn Woods Drainage Improvement Project. In compliance with the National Environmental Policy Act (NEPA) of 1969, as amended, URS requests that your agency review the revised proposed project and provide comments and any available information regarding resources under your agency's jurisdiction within the project area. If you have any questions or require additional information, please contact me by telephone at 713-914-6490, electronic mail at brian_mehok@urscorp.com, or U.S. mail at 10550 Richmond, Suite 155, Houston, TX 77042.

Sincerely,

Brian Mehok, CFM
Senior Environmental Specialist

Cc: Michael Grisham, FEMA Environmental Liaison Officer – Mississippi Transitional Recovery Office, Biloxi, MS

10550 Richmond, Suite 155
Houston, Texas 77042
TEL 713-914-6699
FAX 713-789-8404

Source: ESRI

CLIENT	FEMA			TITLE	PROJECT VICINITY MAP
PROJ	Autumn Woods Drainage Improvements Project				
REVISION NO		DES BY			FEMA
SCALE	Not to Scale	DR BY	ER	06/15/09	PROJ NO 15707413
FILE		CHK BY	BSM	06/16/09	FIGURE 1

URS

July 20, 2009

Mr. James D. Giattina
Director
U.S. Environmental Protection Agency, Region 4
Water Management Division
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303-8960

Re: Request for Project Review – City of Southaven Drainage Improvement Project

Dear Mr. Giattina:

The City of Southaven, MS, has applied for Federal funding under the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Grant Program (HMGP) for the improvement of the drainage system in the Autumn Woods Subdivision. The objective of FEMA's HMGP is to reduce the loss of life and property due to natural disasters and to enable the implementation of long-term hazard mitigation measures during the immediate recovery from a disaster. Through this program, FEMA provides grants to State, territorial, and local governments to implement long-term hazard mitigation measures after a major disaster declaration.

On July 15, 2005, a localized storm cell that was a remnant of Hurricane Dennis caused flooding in the Autumn Woods Subdivision, which is located in the City of Southaven, DeSoto County, MS, at the intersection of Swinnea Road and Rasco Road. During this event, the existing Autumn Woods Subdivision drainage system could not facilitate the stormwater runoff, resulting in significant flooding within the subdivision. Thirty-eight residential properties were affected during the storm event. All thirty eight residences were located outside of both the 100-year floodplain and the 500-year floodplain. Based on an Engineering Flood Analysis conducted by Neel-Schaffer, Inc., the storm event was equivalent to a 100-year storm event.

In efforts to prevent future flooding events within the Autumn Woods Subdivision, the City of Southaven proposes two improvements to area drainage systems that will prevent stormwater from being trapped in the subdivision. The first improvement involves the expansion of the subdivision's existing drainage system, allowing for improved drainage to Rocky Creek. The proposed expansion would require the installation of additional storm drain inlets along Autumn Woods Drive and Longbranch Drive. In addition, two 700-foot-long storm drainage pipes would be installed along Autumn Woods Drive and Longbranch Drive, and extend southwest across Rasco Road to Rocky Creek (see Figure 1).

The second improvement is intended to reduce stormwater flow that travels through the subdivision by redirecting approximately 195 acres of the existing drainage basin northwest of the subdivision to Rocky Creek (see Figure 2). This improvement would require construction of a 64-acre-feet detention pond on the east side of Swinnea Road, approximately 0.2 mile northeast of the Autumn Woods Subdivision. The proposed detention pond will be sized to sufficiently regulate the discharge and retain the 100-year flood event and will overtop through an emergency spillway during a 500-year flood event. A proposed 60- to 72-inch discharge pipe would be installed along the east side of Swinnea Road and extend south from the proposed detention pond approximately 0.4 mile to Rocky Creek.

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Houston, Texas 77042
TEL 713-914-6490
FAX 713-789-8404

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URS Group, Inc. (URS) has been retained by FEMA to prepare an Environmental Assessment (EA) for the proposed project. In compliance with the National Environmental Policy Act (NEPA) of 1969, as amended, URS requests that your agency review the proposed project and provide comments and any available information regarding resources under your agency's jurisdiction within the project area. If you have any questions or require additional information, please contact me by telephone at 713-914-6490, electronic mail at brian_mehok@urscorp.com, or U.S. mail at 10550 Richmond, Suite 155, Houston, TX 77042.

Sincerely,

Brian Mehok
Senior Environmental Specialist

Cc: Michael Grisham, FEMA Environmental Liaison Officer – Mississippi Transitional Recovery Office, Biloxi, MS

10550 Richmond, Suite 155
Houston, Texas 77042
TEL 713-914-6490
FAX 713-789-8404

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

July 24, 2009

Brian Mehok
Senior Environmental Specialist
URS Corporation
10550 Richmond, Suite 155
Houston, Texas 77042

SUBJ: EPA Comments on the City of Southaven, MS Drainage Improvement Project
Federal Emergency Management Agency's (FEMA) Hazard Mitigation Grant

Dear Mr. Mehok:

Consistent with Section 102(2)(c) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) offers the following comments on the Autumn Woods Subdivision drainage system improvements, which we understand will be funded through FEMA's Hazard Mitigation Grant Program (HMGP). We understand that to "prevent stormwater from being trapped in the subdivision," the City has proposed an expansion of the subdivision's existing interior drainage system, allowing for improved drainage to Rocky Creek. The proposed expansion would require the installation of additional storm drain inlets and storm drainage pipes along Autumn Woods Drive and Longbranch Drive. The second improvement is intended to "reduce stormwater flow that travels through the subdivision" by redirecting approximately 195 acres of the existing drainage basin northwest of the subdivision to Rocky Creek. This improvement would also require construction of a 64 acre-feet detention pond on the east side of Swinnea Road, approximately 0.2 mile northeast of the Autumn Woods Subdivision.

We recommend that the necessary construction activities minimize sediment runoff and resultant stream turbidity (and impacts to aquatic life) in the local watershed through use of well-designed and implemented Best Management Practices (BMPs), and through adherence to the guidelines in the State of Mississippi's BMP handbook. Before the commencement of construction, the Project Manager should review the approved State of Mississippi 303(d) List of impaired and threatened waters and determine whether any waters in the project area are listed as impaired or threatened. No additional pollutant loadings (such as additional sediment load) from the project should be allowed into any impaired waters.

The EPA-approved *State of Mississippi Water Quality Criteria for Intrastate, Interstate, and Coastal Waters* regulations have traditionally not included a numerical water quality standard for aquatic life protection due to sediment, but rather feature a

narrative standard for the protection of aquatic life. A local land disturbance (construction) permit and an MDEQ NPDES stormwater permit may be required, and these should be referenced on the plans and in the specifications:

http://deq.state.ms.us/Mdeq.nsf/page/Main_Permits

We appreciate the offer to provide to you our comments on the referenced project. Should you have questions, feel free to coordinate with Paul Gagliano, P.E., of my staff at 404/562-9373 or at gagliano.paul@epa.gov.

Sincerely,

Heinz J. Mueller, Chief
NEPA Program Office
Office of Policy and Management

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

November 29, 2010

Brian Mehok
Senior Environmental Specialist
URS Corporation
10550 Richmond, Suite 155
Houston, Texas 77042

SUBJ: EPA Comments on the City of Southaven, MS Drainage Improvement Project
Federal Emergency Management Agency's (FEMA) Hazard Mitigation Grant

Dear Mr. Mehok:

Consistent with Section 102(2)(c) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) offers the following comments on the Autumn Woods Subdivision drainage system improvements, which we understand will be funded through FEMA's Hazard Mitigation Grant Program (HMGP). We understand that to "prevent stormwater from being trapped in the subdivision," the City has proposed an expansion of the subdivision's existing interior drainage system, allowing for improved drainage to Rocky Creek. We also understand that you have revised your original plans submitted on July 20, 2009. The revised plans include modifications of the Autumn Woods drainage, the Swinnea Road detention pond redesign, drainage improvements to the Greenbrook Subdivision, and re-alignment and bank stabilization of the Rocky Creek Tributary.

As stated previously, we recommend that the necessary construction activities minimize sediment runoff and resultant stream turbidity (and impacts to aquatic life) in the local watershed through use of well-designed and implemented Best Management Practices (BMPs), and through adherence to the guidelines in the State of Mississippi's BMP handbook. Before the commencement of construction, the Project Manager should review the approved State of Mississippi 303(d) List of impaired and threatened waters and determine whether any waters in the project area are listed as impaired or threatened. No additional pollutant loadings (such as additional sediment load) from the project should be allowed into any impaired waters.

The EPA-approved *State of Mississippi Water Quality Criteria for Intrastate, Interstate, and Coastal Waters* regulations have traditionally not included a numerical water quality standard for aquatic life protection due to sediment, but rather feature a narrative standard for the protection of aquatic life. A local land disturbance (construction) permit and an MDEQ NPDES stormwater permit may be required, and these should be referenced on the plans and in the specifications:

http://deq.state.ms.us/Mdeq.nsf/page/Main_Permits

It is also stated in your project update letter that the proposed cross section for the Rock Creek Tributary channel relocation will be an 8-foot wide flat bottom channel with 2:1 side slopes. EPA would recommend the use of natural stream channel design techniques for the proposed stream channel re-alignment and bank stabilization of the Rocky Creek Tributary.

We appreciate the offer to provide to you our comments on the referenced project. Should you have questions, feel free to coordinate with Dan Holliman of my staff at 404-562-9531 or at holliman.daniel@epa.gov.

Sincerely,

Heinz J. Mueller, Chief
NEPA Program Office
Office of Policy and Management

URS

November 1, 2010

Mr. Ray Aycock
Field Supervisor
U.S. Fish and Wildlife Service, Jackson Field Office
Suite A
6578 Dogwood View Parkway
Jackson, MS 39213

Re: Request for Project Review –City of Southaven, MS Autumn Woods Drainage Improvement Project - Revised Project Scope of Work

Dear Mr. Aycock:

The City of Southaven, Mississippi has applied for Federal funding under the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Grant Program for improvements to drainage infrastructure in the vicinity of the Autumn Woods subdivision. URS Group, Inc. (URS) was retained by FEMA to prepare an Environmental Assessment for the proposed Autumn Woods Drainage Improvement Project (Project) that was finalized with a Finding of No Significant Impact in March of 2010. In development of the EA, an agency consultation letter was submitted to your agency on July 20, 2009 requesting a project review. U.S. Fish and Wildlife Service provided a finding of "No federally listed endangered, threatened, or candidate species present" for the original scope of work; copies of the correspondence are attached for your reference.

In a letter to the Mississippi Emergency Management Agency (MEMA), dated July 2, 2010, the City of Southaven requested several modifications to the original approved scope of work that are necessary to satisfy the overall objective of the Project's purpose and need. Modifications to the original scope of work include the following:

- **Autumn Woods Drainage and Discharge Modifications** – The original scope of work included the installation of two 700-foot-long storm drainage pipes along Autumn Woods Drive and Long Branch Drive, which would have extended southwest across Rasco Road into Rocky Creek. The revised scope includes the installation of approximately 800 feet and 1,000 feet of reinforced concrete pipe (RCP) would along Autumn Woods Drive and Long Branch Drive, respectively. In addition, approximately 240 feet of RCP would be installed along Acorn Cove which would tie in to the Long Branch Drive drainage line. The Autumn Wood Drive and Long Branch Drive pipes would extend southwest across Rasco Road where they would discharge to outfall structures adjacent to Rocky Creek. Construction of the outfall structures for the Autumn Woods Drive and Long Branch Drive drainage lines would include the excavation of two 4-foot wide open drainage ditches, approximately 300-feet and 120-feet long, respectively, which would extend and discharge to Rocky Creek. Rip-rap would be installed at the drainage line outlets to minimize erosion within the drainage ditches. In addition to the new construction, proposed improvements to the existing Autumn Woods drainage system include the repair of rusted or damaged portions of the existing corrugated metal drainage pipes, and the plugging and filling of sections of drainage system that will no longer be utilized.

- **Detention Pond Redesign** – The proposed Swinnea Road detention pond design would be modified from a single detention pond to two shallower detention ponds to reduce the overall depth of excavation on the site. The detention pond was originally designed to retain a 100-year storm event. A 3-hour duration storm event was selected as the design event, which is similar to the flooding event

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Houston, Texas 77042
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FAX 713-789-8404

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of August 2005. The overall detention pond volume was reduced from the original 64 acre-feet to approximately 52 acre-feet. This modification would allow for all excavated material to be placed on the project site.

- **Detention Pond Discharge** –The proposed 60- to 72-inch discharge pipe along Swinnea Road would be removed from consideration and the detention pond discharge redirected to the storm drainage infrastructure in the Autumn Woods subdivision. The proposed improvements to the Autumn Woods subdivision drainage pipes would provide sufficient capacity to convey the stormwater from the detention pond to Rocky Creek.

- **Greenbrook Subdivision Discharge** – To retain enough water upstream of the Autumn Woods Subdivision, additional drainage improvements would be required to modify the storm drainage system in the Greenbrook Subdivision. The discharge pipe from the Greenbrook Subdivision would be modified to convey the majority of the subdivision's stormwater to the proposed detention ponds. Without such improvements, the existing detention pond at Gators Drive would overtop during a 100-year storm event resulting in the potential for additional flooding in the Autumn Woods Subdivision.

- **Re-alignment and bank stabilization of the Rocky Creek Tributary** – The original scope of work proposed minor creek improvements and bank stabilization activities, including the installation of rip-rap, to minimize erosion and scouring within Rocky Creek. Additional modifications are now proposed to protect an adjacent fire station from stream bank erosion and Swinnea Road from undermining. The revised project would relocate approximately 410-feet of the tributary approximately 50 feet south, aligning the tributary with the Swinnea Road culvert. The proposed re-alignment would construct an 8-foot wide flat bottom channel with 2:1 side slopes. Material excavated to construct the new channel would be used to fill the existing channel. Rip-rap would be installed along approximately 600-feet of the realigned channel for armoring.

URS Group, Inc. (URS) has been retained by FEMA to prepare the Supplemental EA for the proposed Autumn Woods Drainage Improvement Project. In compliance with the National Environmental Policy Act (NEPA) of 1969, as amended, URS requests that your agency review the revised proposed project and provide comments and any available information regarding resources under your agency's jurisdiction within the project area. If you have any questions or require additional information, please contact me by telephone at 713-914-6490, electronic mail at brian_mehok@urscorp.com, or U.S. mail at 10550 Richmond, Suite 155, Houston, TX 77042.

Sincerely,

Brian Mehok, CFM
Senior Environmental Specialist

Cc: Michael Grisham, FEMA Environmental Liaison Officer – Mississippi Transitional Recovery Office, Biloxi, MS

10550 Richmond, Suite 155
Houston, Texas 77042
TEL 713-914-6699
FAX 713-789-8404

Source: ESRI

CLIENT	FEMA	TITLE:	PROJECT VICINITY MAP		
PROJ	Autumn Woods Drainage Improvements Project				
REVISION NO		DES BY			PROJ NO 15707412
SCALE	Not to Scale	DR BY	ER	06/15/09	FIGURE 1
TRL		CHK BY	BSM	06/16/09	

FEMA

URS

RECEIVED

By MS Field Office

July 20, 2009

Mr. Ray Aycock
Field Supervisor
U.S. Fish and Wildlife Service, Jackson Field Office
Suite A
6578 Dogwood View Parkway
Jackson, MS 39213

Re: Request for Project Review – City of Southaven Drainage Improvement Project

Dear Mr. Aycock:

The City of Southaven, MS, has applied for Federal funding under the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Grant Program (HMGP) for the improvement of the drainage system in the Autumn Woods Subdivision. The objective of FEMA's HMGP is to reduce the loss of life and property due to natural disasters and to enable the implementation of long-term hazard mitigation measures during the immediate recovery from a disaster. Through this program, FEMA provides grants to State, territorial, and local governments to implement long-term hazard mitigation measures after a major disaster declaration.

On July 15, 2005, a localized storm cell that was a remnant of Hurricane Dennis caused flooding in the Autumn Woods Subdivision, which is located in the City of Southaven, DeSoto County, MS, at the intersection of Swinnea Road and Rasco Road. During this event, the existing Autumn Woods Subdivision drainage system could not facilitate the stormwater runoff, resulting in significant flooding within the subdivision. Thirty-eight residential properties were affected during the storm event. All thirty eight residences were located outside of both the 100-year floodplain and the 500-year floodplain. Based on an Engineering Flood Analysis conducted by Neel-Schaffer, Inc., the storm event was equivalent to a 100-year storm event.

In efforts to prevent future flooding events within the Autumn Woods Subdivision, the City of Southaven proposes two improvements to area drainage systems that will prevent stormwater from being trapped in the subdivision. The first improvement involves the expansion of the subdivision's existing drainage system, allowing for improved drainage to Rocky Creek. The proposed expansion would require the installation of additional storm drain inlets along Autumn Woods Drive and Longbranch Drive. In addition, two 700-foot-long storm drainage pipes would be installed along Autumn Woods Drive and Longbranch Drive, and extend southwest across Rasco Road to Rocky Creek (see Figure 1).

The second improvement is intended to reduce stormwater flow that travels through the subdivision by redirecting approximately 195 acres of the existing drainage basin northwest of the subdivision to Rocky Creek (see Figure 2). This improvement would require construction of a 64-acre-feet detention pond on the east side of Swinnea Road, approximately 0.2 mile northeast of the Autumn Woods Subdivision. The proposed detention pond will be sized to sufficiently regulate the discharge and retain the 100-year flood event and will overtop through an emergency spillway during a 500-year flood event. A proposed 60- to 72-inch discharge pipe would be installed along the east side of Swinnea Road and extend south from the proposed detention pond approximately 0.4 mile to Rocky Creek.

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FAX 713-789-8404

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URS Group, Inc. (URS) has been retained by FEMA to prepare an Environmental Assessment (EA) for the proposed project. In compliance with the National Environmental Policy Act (NEPA) of 1969, as amended, URS requests that your agency review the proposed project and provide comments and any available information regarding resources under your agency's jurisdiction within the project area. If you have any questions or require additional information, please contact me by telephone at 713-914-6490, electronic mail at brian_mehok@urscorp.com, or U.S. mail at 10550 Richmond, Suite 155, Houston, TX 77042.

Sincerely,

Brian Mehok
Senior Environmental Specialist

Cc: Michael Grisham, FEMA Environmental Liaison Officer – Mississippi Transitional Recovery Office, Biloxi, MS

No federally listed endangered, threatened, or candidate species present

U.S. Fish and Wildlife Service
Mississippi Field Office
6578 Dogwood View Pkwy
Jackson, MS 39213
Log # 09-871 Date 7/22/09

10550 Richmond, Suite 155
Houston, Texas 77042
TEL 713-914-6490
FAX 713-789-8404

URS

November 29, 2010

Harry Wilson, P.E.
Environmental Permits Division
Office of Pollution Control
Mississippi Department of Environmental Quality
P.O. Box 2261
Jackson, MS 39225

Re: Request for Project Review –City of Southaven, MS Autumn Woods Drainage Improvement Project - Revised Project Scope of Work

Dear Mr. Wilson:

The City of Southaven, Mississippi has applied for Federal funding under the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Grant Program for improvements to drainage infrastructure in the vicinity of the Autumn Woods subdivision. URS Group, Inc. (URS) was retained by FEMA to prepare an Environmental Assessment for the proposed Autumn Woods Drainage Improvement Project (Project) that was finalized with a Finding of No Significant Impact in March of 2010. In development of the EA, an agency consultation letter was submitted to your agency on July 20, 2009 requesting a project review. A copy of this letter is attached for your reference.

In a letter to the Mississippi Emergency Management Agency (MEMA), dated July 2, 2010, the City of Southaven requested several modifications to the original approved scope of work that are necessary to satisfy the overall objective of the Project's purpose and need. Modifications to the original scope of work include the following:

- **Autumn Woods Drainage and Discharge Modifications** – The original scope of work included the installation of two 700-foot-long storm drainage pipes along Autumn Woods Drive and Long Branch Drive, which would have extended southwest across Rasco Road into Rocky Creek. The revised scope includes the installation of approximately 800 feet and 1,000 feet of reinforced concrete pipe (RCP) would along Autumn Woods Drive and Long Branch Drive, respectively. In addition, approximately 240 feet of RCP would be installed along Acorn Cove which would tie in to the Long Branch Drive drainage line. The Autumn Wood Drive and Long Branch Drive pipes would extend southwest across Rasco Road where they would discharge to outfall structures adjacent to Rocky Creek. Construction of the outfall structures for the Autumn Woods Drive and Long Branch Drive drainage lines would include the excavation of two 4-foot wide open drainage ditches, approximately 300-feet and 120-feet long, respectively, which would extend and discharge to Rocky Creek. Rip-rap would be installed at the drainage line outlets to minimize erosion within the drainage ditches. In addition to the new construction, proposed improvements to the existing Autumn Woods drainage system include the repair of rusted or damaged portions of the existing corrugated metal drainage pipes, and the plugging and filling of sections of drainage system that will no longer be utilized.

- **Detention Pond Redesign** – The proposed Swinnea Road detention pond design would be modified from a single detention pond to two shallower detention ponds to reduce the overall depth of excavation on the site. The detention pond was originally designed to retain a 100-year storm event. A 3-hour duration storm event was selected as the design event, which is similar to the flooding event of August 2005. The overall detention pond volume was reduced from the original 64 acre-feet to

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Houston, Texas 77042
TEL 713-914-6699
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approximately 52 acre-feet. This modification would allow for all excavated material to be placed on the project site.

- **Detention Pond Discharge** –The proposed 60- to 72-inch discharge pipe along Swinnea Road would be removed from consideration and the detention pond discharge redirected to the storm drainage infrastructure in the Autumn Woods subdivision. The proposed improvements to the Autumn Woods subdivision drainage pipes would provide sufficient capacity to convey the stormwater from the detention pond to Rocky Creek.

- **Greenbrook Subdivision Discharge** – To retain enough water upstream of the Autumn Woods Subdivision, additional drainage improvements would be required to modify the storm drainage system in the Greenbrook Subdivision. The discharge pipe from the Greenbrook Subdivision would be modified to convey the majority of the subdivision's stormwater to the proposed detention ponds. Without such improvements, the existing detention pond at Gators Drive would overtop during a 100-year storm event resulting in the potential for additional flooding in the Autumn Woods Subdivision.

- **Re-alignment and bank stabilization of the Rocky Creek Tributary** – The original scope of work proposed minor creek improvements and bank stabilization activities, including the installation of rip-rap, to minimize erosion and scouring within Rocky Creek. Additional modifications are now proposed to protect an adjacent fire station from stream bank erosion and Swinnea Road from undermining. The revised project would relocate approximately 410-feet of the tributary approximately 50 feet south, aligning the tributary with the Swinnea Road culvert. The proposed re-alignment would construct an 8-foot wide flat bottom channel with 2:1 side slopes. Material excavated to construct the new channel would be used to fill the existing channel. Rip-rap would be installed along approximately 600-feet of the realigned channel for armoring.

URS Group, Inc. (URS) has been retained by FEMA to prepare the Supplemental EA for the proposed Autumn Woods Drainage Improvement Project. In compliance with the National Environmental Policy Act (NEPA) of 1969, as amended, URS requests that your agency review the revised proposed project and provide comments and any available information regarding resources under your agency's jurisdiction within the project area. A copy of a Certificate of Permit Coverage under Mississippi's Large Construction Stormwater General NPDES Permit (Coverage No.MSR105770) for the proposed project is attached for reference. If you have any questions or require additional information, please contact me by telephone at 713-914-6490, electronic mail at brian_mehok@urscorp.com, or U.S. mail at 10550 Richmond, Suite 155, Houston, TX 77042.

Sincerely,

Brian Mehok

Brian Mehok, CFM
Senior Environmental Specialist

Cc: Michael Grisham, FEMA Environmental Liaison Officer – Mississippi Transitional Recovery Office, Biloxi, MS

10550 Richmond, Suite 155
Houston, Texas 77042
TEL 713-914-6699
FAX 713-789-8404

URS

November 1, 2010

Ms. Michelle Vinson
Environmental Permits Division
Office of Pollution Control
Mississippi Department of Environmental Quality
P.O. Box 10385
Jackson, MS 39289-0385

Re: Request for Project Review –City of Southaven, MS Autumn Woods Drainage Improvement Project - Revised Project Scope of Work

Dear Ms. Vinson:

The City of Southaven, Mississippi has applied for Federal funding under the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Grant Program for improvements to drainage infrastructure in the vicinity of the Autumn Woods subdivision. URS Group, Inc. (URS) was retained by FEMA to prepare an Environmental Assessment for the proposed Autumn Woods Drainage Improvement Project (Project) that was finalized with a Finding of No Significant Impact in March of 2010. In development of the EA, an agency consultation letter was submitted to your agency on July 20, 2009 requesting a project review. A copy of this letter is attached for your reference.

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Sincerely,

Brian Mehok, CFM
Senior Environmental Specialist

Cc: Michael Grisham, FEMA Environmental Liaison Officer – Mississippi Transitional Recovery Office, Biloxi, MS

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Source: ESRI

CLIENT	FEMA			TITLE	PROJECT VICINITY MAP
PROJ	Autumn Woods Drainage Improvements Project				
REVISION NO		DES BY			FEMA
SCALE	Not to Scale	DR BY	ER	06/15/09	PROJ NO 15707412
FILE		CK BY	BSM	06/16/09	FIGURE 1

URS

July 20, 2009

Ms. Michelle Vinson
Environmental Permits Division
Office of Pollution Control
Mississippi Department of Environmental Quality
P.O. Box 10385
Jackson, MS 39289-0385

Re: Request for Project Review – City of Southaven Drainage Improvement Project

Dear Ms. Vinson:

The City of Southaven, MS, has applied for Federal funding under the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Grant Program (HMGP) for the improvement of the drainage system in the Autumn Woods Subdivision. The objective of FEMA's HMGP is to reduce the loss of life and property due to natural disasters and to enable the implementation of long-term hazard mitigation measures during the immediate recovery from a disaster. Through this program, FEMA provides grants to State, territorial, and local governments to implement long-term hazard mitigation measures after a major disaster declaration.

On July 15, 2005, a localized storm cell that was a remnant of Hurricane Dennis caused flooding in the Autumn Woods Subdivision, which is located in the City of Southaven, DeSoto County, MS, at the intersection of Swinnea Road and Rasco Road. During this event, the existing Autumn Woods Subdivision drainage system could not facilitate the stormwater runoff, resulting in significant flooding within the subdivision. Thirty-eight residential properties were affected during the storm event. All thirty eight residences were located outside of both the 100-year floodplain and the 500-year floodplain. Based on an Engineering Flood Analysis conducted by Neel-Schaffer, Inc., the storm event was equivalent to a 100-year storm event.

In efforts to prevent future flooding events within the Autumn Woods Subdivision, the City of Southaven proposes two improvements to area drainage systems that will prevent stormwater from being trapped in the subdivision. The first improvement involves the expansion of the subdivision's existing drainage system, allowing for improved drainage to Rocky Creek. The proposed expansion would require the installation of additional storm drain inlets along Autumn Woods Drive and Longbranch Drive. In addition, two 700-foot-long storm drainage pipes would be installed along Autumn Woods Drive and Longbranch Drive, and extend southwest across Rasco Road to Rocky Creek (see Figure 1).

The second improvement is intended to reduce stormwater flow that travels through the subdivision by redirecting approximately 195 acres of the existing drainage basin northwest of the subdivision to Rocky Creek (see Figure 2). This improvement would require construction of a 64-acre-feet detention pond on the east side of Swinnea Road, approximately 0.2 mile northeast of the Autumn Woods Subdivision. The proposed detention pond will be sized to sufficiently regulate the discharge and retain the 100-year flood event and will overtop through an emergency spillway during a 500-year flood event. A proposed 60- to 72-inch discharge pipe would be installed along the east side of Swinnea Road and extend south from the proposed detention pond approximately 0.4 mile to Rocky Creek.

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