



HISTORIC
FRANKLIN
TENNESSEE

MEMORANDUM

December 31, 2012

TO: Board of Mayor and Alderman

FROM: Eric S. Stuckey, City Administrator *Eric*
David Parker, P.E.; CIP Executive/City Engineer
Paul Holzen, P.E.; Director of Engineering
Ben Worley, Right of Way Agent/Project Manager

SUBJECT: Consideration of Agreement (COF 2012-0198) Between The Department of the Army and Metropolitan Government of Nashville and Davidson County and City of Franklin and City of Brentwood and Williamson County for the Harpeth River, Tennessee Feasibility Study

Purpose

The purpose of this memorandum is to provide the Board of Mayor and Aldermen (BOMA) with information to consider an agreement between the Department of the Army and Metropolitan Government of Nashville and Davidson County, City of Franklin, City of Brentwood and Williamson County for the Harpeth River, Tennessee Feasibility Study

Background

The May 2010 flood event created devastation throughout the Harpeth River Watershed and caused four fatalities and over \$480 million in direct economic impacts in the Harpeth River Watershed alone. For this reason, the Department of the Army conducted a preliminary reconnaissance of the Harpeth River Watershed and found over 850 structures in the regulated floodplain within the basin located in the City of Brentwood, City of Franklin, Williamson County and Nashville/Davidson County. In addition, they found aquatic ecosystem issues throughout the basin primarily involving stream bank erosion and loss of riparian buffers. The Department of the Army's next phase is to conduct a feasibility study that includes both flood risk management and ecosystem restoration in Davidson County, Williamson County, City of Brentwood and City of Franklin. They will analyze alternative flood risk management options geared toward regional measures that provide cross-jurisdictional benefits in the watershed. Their Reconnaissance analysis indicated a strong possibility for a dry dam or a configuration of multiple dry dams to effectively reduce flood risk in the primary damage centers of the basin. To move forward with this study the Department of the Army requires a sponsor agency to match 50% of the total cost. Below is breakdown of the overall cost:

Financial Impact

The financial cost negotiated with all agencies is shown below and will be paid over a three year period:

	Total Study Costs by Sponsor		
	Federal Cash	PM Involvement Credit	Sponsor Cash
Franklin	\$280,166.17	\$33,333.33	\$246,832.84
Brentwood	\$50,000		\$50,000
Williamson	\$83,333.33	\$33,333.33	\$50,000
Nashville	\$286,500.49	\$33,333.33	\$253,167.16



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A detailed cost break down shows as **Exhibit 1** has been included for your review. The City's contribution over a three year period would come from the Stormwater Fund

Recommendation

Staff recommends approval of the Agreement between The Department of the Army and Metropolitan Government of Nashville and Davidson County and City of Franklin and City of Brentwood and Williamson County for the Harpeth River, Tennessee Feasibility Study

AGREEMENT
BETWEEN
THE DEPARTMENT OF THE ARMY
AND
METROPOLITAN GOVERNMENT OF NASHVILLE AND DAVIDSON COUNTY
AND
CITY OF FRANKLIN
AND
CITY OF BRENTWOOD
AND
WILLIAMSON COUNTY
FOR THE
HARPETH RIVER, TENNESSEE FEASIBILITY STUDY

THIS AGREEMENT is entered into this _____ day of _____, _____, by and between the Department of the Army (hereinafter the "Government"), represented by the US Army Engineer, Nashville District and the Metropolitan Government of Nashville and Davidson County, represented by its Mayor; the City of Franklin, represented by its Mayor; the City of Brentwood, represented by its Mayor; and Williamson County, represented by its County Mayor (hereinafter the "Non-Federal Sponsors").

WITNESSETH, THAT:

WHEREAS, by resolution dated September 19, 1973, the Committee on Environment and Public Works, U.S. Senate has requested a review of the report of the Chief of Engineer on the Cumberland River and Tributaries, published as House Document Numbered 761, 79th Congress, and other pertinent reports, with a view to determining whether any modifications of the recommendations contained therein are advisable at the present time, with particular reference to providing a plan for development, utilization, and conservation of water and related land resources of the metropolitan region of Nashville, Tennessee[...];

WHEREAS, the U.S. Army Corps of Engineers conducted a reconnaissance study of flood risk management, aquatic ecosystem restoration, water supply, and related recreational features pursuant to such request and determined that further planning in the nature of a feasibility study for flood risk management, aquatic ecosystem restoration, and related recreational features should proceed;

WHEREAS, the Non-Federal Sponsors desire to provide in-kind contributions (hereinafter the "*in-kind contributions*" as defined in Article I.K. of this Agreement) that are necessary to prepare the feasibility report and to receive credit for such contributions toward the amount of its required contribution for the *Study*;

WHEREAS, the Non-Federal Sponsors may provide up to 100 percent of their required contribution for the *Study* as *in-kind contributions*;

WHEREAS, the Government and Non-Federal Sponsors have the full authority and capability to perform as hereinafter set forth and intend to cooperate in cost-sharing and financing of the *Study* in accordance with the terms of this Agreement; and

WHEREAS, the Government and the Non-Federal Sponsors, in connection with this Agreement, desire to foster a partnering strategy and a working relationship between the Government and the Non-Federal Sponsors through a mutually developed formal strategy of commitment and communication embodied herein, which creates an environment where trust and teamwork prevent disputes, foster a cooperative bond between the Government and the Non-Federal Sponsors, and facilitate the successful *Study*.

NOW, THEREFORE, the Government and the Non-Federal Sponsors agree as follows:

ARTICLE I -- DEFINITIONS

A. The term "*Study*" shall mean the activities and tasks required to identify and evaluate alternatives and the preparation of a decision document that, when appropriate, recommends a coordinated and implementable solution for flood risk management, aquatic ecosystem restoration, and recreation at the Harpeth River Watershed, Tennessee, as generally described in the Harpeth River, Tennessee Final Reconnaissance Report, approved by the Commander, Nashville District on May 24, 2012. The term includes *in-kind contributions* described in paragraph K. of this Article.

B. The term "*total study costs*" shall mean the sum of all costs incurred by the Non-Federal Sponsors and the Government in accordance with the terms of this Agreement directly related to performance of the *Study*. Subject to the provisions of this Agreement, the term shall include, but is not necessarily limited to: the Government's costs of plan formulation and evaluation, including applicable economic, engineering, real estate, and environmental analyses; the Government's costs of preparation of the decision document for the *Study*; the costs of *in-kind contributions* determined in accordance with Article II.E. of this Agreement; the Government's costs of Agency Technical Review and other review processes required by the Government; the Government's costs of Independent External Peer Review, if required, except for the costs of any contract for an Independent External Peer Review panel; the Government's costs of preparation of a floodplain management plan; the Government's supervision and administration costs; the Non-Federal Sponsor's and the Government's costs of participation in the Study Coordination Team in accordance with Article III of this Agreement; the Government's costs of contract dispute settlements or awards; and the Non-Federal Sponsors' and the Government's costs of audit in accordance with Article VI.B. and Article VI.C. of this Agreement. The term does not include any costs of dispute resolution under Article V of this Agreement; any costs incurred as part of reconnaissance studies; any costs incurred as part of feasibility studies under any other agreement; the Non-Federal Sponsors' costs of negotiating this Agreement; any costs of a contract for an Independent External Peer Review panel; or any costs of negotiating a design agreement for a project or separable element thereof.

C. The term "*study costs to be shared during the period of study*" shall mean the difference between *total study costs* and *excess study costs*.

D. The term “*excess study costs*” shall mean the difference between the most recent estimate of *total study costs* and the amount of *total study costs* specified in Article IV.A.1. of this Agreement, excluding any increase in *total study costs* that resulted from a change in Federal law or a change in the scope of the *Study* requested by the Non-Federal Sponsor or any increase in *total study costs* that otherwise was agreed upon in writing by the parties.

E. The term “*period of study*” shall mean the time from the effective date of this Agreement to the date that:

1. the Assistant Secretary of the Army (Civil Works) submits the feasibility report to the Office of Management and Budget (OMB) for review for consistency with policies and programs of the Administration, if the project or project modification that is the subject of this *Study* will require further Congressional authorization to implement the recommended plan; or

2. the decision document for the study is duly approved by the Government, if the project or project modification that is the subject of this *Study* will not require further Congressional authorization to implement the recommended plan; or

3. the date that this Agreement is terminated in accordance with Article IX of this Agreement.

F. The term “*financial obligations to be shared during the period of study*” shall mean the financial obligations of the Government and the costs for *in-kind contributions*, as determined by the Government, that result or would result in costs that are or would be included in *study costs to be shared during the period of study*.

G. The term “*non-Federal proportionate share*” shall mean the ratio of the sum of the costs included in *study costs to be shared during the period of study* for *in-kind contributions*, as determined by the Government, and the Non-Federal Sponsors’ total contribution of funds required by Article II.C.1.b. of this Agreement to *financial obligations to be shared during the period of study*, as projected by the Government.

H. The term “*Federal program funds*” shall mean funds provided by a Federal agency, other than the Department of the Army, plus any non-Federal contribution required as a matching share therefor.

I. The term “*fiscal year*” shall mean one year beginning on October 1 and ending on September 30.

J. The term “*PMP*” shall mean the project management plan, and any modifications thereto, developed by the Government, and agreed to by the Non-Federal Sponsors, that specifies the scope, cost, and schedule for *Study* activities and guides the performance of the *Study* through the *period of study*.

K. The term “*in-kind contributions*” shall mean planning, supervision and administration, services, materials, supplies, and other in-kind services that are performed or provided by the Non-Federal Sponsor after the effective date of this Agreement in accordance with the *PMP* and that are necessary for performance of the *Study*.

L. The term “*fiscal year of the Non-Federal Sponsors*” shall mean one year beginning on July 1 and ending on June 30.

ARTICLE II - OBLIGATIONS OF THE GOVERNMENT AND THE NON-FEDERAL SPONSOR

A. The Government, subject to receiving funds appropriated by the Congress of the United States (hereinafter the “Congress”) and using those funds and funds provided by the Non-Federal Sponsors, expeditiously shall conduct the *Study*, applying those procedures usually applied to Federal projects, in accordance with Federal laws, regulations, and policies. The Non-Federal Sponsors expeditiously shall perform or provide *in-kind contributions* in accordance with applicable Federal laws, regulations, and policies.

1. To the extent possible, the Government and the Non-Federal Sponsors shall conduct the *Study* in accordance with the *PMP*.

2. The Government shall afford the Non-Federal Sponsors the opportunity to review and comment on all products that are developed by contract or by Government personnel during the *period of study*. The Government shall consider in good faith the comments of the Non-Federal Sponsors, but the final approval of all *Study* products shall be exclusively within the control of the Government.

3. The Government shall afford the Non-Federal Sponsors the opportunity to review and comment on the solicitations for all Government contracts, including relevant scopes of work, prior to the Government’s issuance of such solicitations. To the extent possible, the Government shall afford the Non-Federal Sponsors the opportunity to review and comment on all proposed contract modifications, including change orders. In any instance where providing the Non-Federal Sponsors with notification of a contract modification is not possible prior to execution of the contract modification, the Government shall provide such notification in writing at the earliest date possible. To the extent possible, the Government also shall afford the Non-Federal Sponsors the opportunity to review and comment on all contract claims prior to resolution thereof. The Government shall consider in good faith the comments of the Non-Federal Sponsors, but the contents of solicitations, award of contracts or commencement of work on the *Study* using the Government’s own forces, execution of contract modifications, resolution of contract claims, and performance of all work on the *Study*, except for *in-kind contributions*, shall be exclusively within the control of the Government.

4. At the time the U.S. Army Engineer, Nashville District (hereinafter the “District Engineer”) furnishes the contractor with the Government’s Written Notice of Acceptance of Completed Work for each contract awarded by the Government for the *Study*, the District Engineer

shall furnish a copy thereof to the Non-Federal Sponsors.

5. The Non-Federal Sponsors shall afford the Government the opportunity to review and comment on the solicitations for all contracts for the *in-kind contributions*, including relevant scopes of work, prior to the Non-Federal Sponsors' issuance of such solicitations. To the extent possible, the Non-Federal Sponsors shall afford the Government the opportunity to review and comment on all proposed contract modifications, including change orders. In any instance where providing the Government with notification of a contract modification is not possible prior to execution of the contract modification, the Non-Federal Sponsors shall provide such notification in writing at the earliest date possible. To the extent possible, the Non-Federal Sponsors also shall afford the Government the opportunity to review and comment on all contract claims prior to resolution thereof. The Non-Federal Sponsors shall consider in good faith the comments of the Government but the contents of solicitations, award of contracts or commencement of work on the *Study* using the Non-Federal Sponsors' own forces, execution of contract modifications, resolution of contract claims, and performance of all work on the *in-kind contributions* shall be exclusively within the control of the Non-Federal Sponsors.

6. At the time the Non-Federal Sponsors furnish a contractor with a notice of acceptance of completed work for each contract awarded by the Non-Federal Sponsors for the *in-kind contributions*, the Non-Federal Sponsors shall furnish a copy thereof to the Government.

B. The Government shall allocate *total study costs* between *study costs to be shared during the period of study* and *excess study costs*.

C. The Non-Federal Sponsors shall contribute 50 percent of *study costs to be shared during the period of study* in accordance with the provisions of this paragraph.

1. The Non-Federal Sponsors shall provide a contribution of funds as determined below:

a. If the Government projects at any time that the collective value of the Non-Federal Sponsors' contributions under Article III and Article VI of this Agreement will be less than the Non-Federal Sponsors' required share of 50 percent of *study costs to be shared during the period of study*, the Government shall determine the amount of funds that would be necessary to meet the Non-Federal Sponsors' required share prior to any consideration of the credit the Government projects will be afforded for *in-kind contributions* pursuant to paragraph F. of this Article.

b. The Non-Federal Sponsors shall provide funds in the amount determined by this paragraph in accordance with Article IV.B. of this Agreement. To determine the contribution of funds the Non-Federal Sponsors shall provide, the Government shall reduce the amount determined in accordance with paragraph C.1.a. of this Article by the amount of credit the Government projects will be afforded for *in-kind contributions* pursuant to paragraph F. of this Article.

2. The Government, subject to the availability of funds and as limited by paragraph

G. of this Article, shall refund or reimburse to the Non-Federal Sponsors any contributions in excess of 50 percent of *study costs to be shared during the period of study* if the Government determines at any time that the collective value of the following has exceeded 50 percent of *study costs to be shared during the period of study*: (a) the Non-Federal Sponsors' contribution of funds required by paragraph C.1.b. of this Article; (b) the amount of credit to be afforded for *in-kind contributions* pursuant to paragraph F. of this Article; and (c) the value of the Non-Federal Sponsors' contributions under Article III and Article VI of this Agreement.

D. The Non-Federal Sponsors shall contribute 50 percent of *excess study costs* in accordance with the provisions of this paragraph.

1. The Government shall determine the amount of funds that would be necessary to meet the Non-Federal Sponsors' required share prior to any consideration of the credit the Government projects will be afforded for *in-kind contributions* pursuant to paragraph F. of this Article.

2. The Non-Federal Sponsors shall provide funds in the amount determined by this paragraph in accordance with Article IV.C.3. of this Agreement. To determine the contribution of funds the Non-Federal Sponsors shall provide, the Government shall reduce the amount determined in accordance with paragraph D.1. of this Article by the amount of credit the Government projects will be afforded for *in-kind contributions* pursuant to paragraph F. of this Article.

E. The Government shall determine and include in *total study costs* any costs incurred by the Non-Federal Sponsors for *in-kind contributions*, subject to the conditions and limitations of this paragraph. The Non-Federal Sponsors in a timely manner shall provide the Government with such documents as are sufficient to enable the Government to determine the amount of costs to be included in *total study costs* for *in-kind contributions*.

1. Acceptance by the Government of *in-kind contributions* shall be subject to a review by the Government to verify that all economic, engineering, real estate, and environmental analyses or other items performed or provided as *in-kind contributions* are accomplished in a satisfactory manner and in accordance with applicable Federal laws, regulations, and policies, and to verify that all analyses, services, materials, supplies, and other in-kind services provided as *in-kind contributions* are necessary for the *Study*.

2. The Non-Federal Sponsors' costs for *in-kind contributions* that may be eligible for inclusion in *total study costs* pursuant to this Agreement shall be subject to an audit in accordance with Article VI.C. of this Agreement to determine the reasonableness, allocability, and allowability of such costs.

3. The Non-Federal Sponsors' costs for *in-kind contributions* that may be eligible for inclusion in *total study costs* pursuant to this Agreement are not subject to interest charges, nor are they subject to adjustment to reflect changes in price levels between the time the *in-kind contributions* are provided and the time the costs are included in *total study costs*.

4. The Government shall not include in *total study costs* any costs for *in-kind contributions* paid by the Non-Federal Sponsors using *Federal program funds* unless the Federal agency providing the funds verifies in writing that such funds are authorized to be used to carry out the *Study*.

5. The Government shall not include in *total study costs* any costs for *in-kind contributions* in excess of the Government's estimate of the costs of the *in-kind contributions* if the services, materials, supplies, and other in-kind services had been provided by the Government.

F. The Government, in accordance with this paragraph, shall afford credit toward the amount of funds determined in accordance with paragraph C.1.a. and paragraph D.1. of this Article for the costs of *in-kind contributions* determined in accordance with paragraph E. of this Article. The credit for *in-kind contributions* first shall be afforded toward the amount of funds determined in accordance with paragraph C.1.a. of this Article. If the amount of credit afforded exceeds the amount of funds determined in accordance with paragraph C.1.a. of this Article, the remaining portion of credit to be afforded shall be afforded toward the amount of funds determined in accordance with paragraph D.1. of this Article. However, the maximum amount of credit that can be afforded for *in-kind contributions* shall not exceed the least of the following amounts as determined by the Government: the amount of funds determined in accordance with paragraph C.1.a. and paragraph D.1. of this Article; the costs of *in-kind contributions* determined in accordance with paragraph E. of this Article; or 50 percent of *total study costs*.

G. Notwithstanding any other provision of this Agreement, the Non-Federal Sponsors shall not be entitled to reimbursement of any costs of *in-kind contributions* determined in accordance with paragraph E. of this Article and included in *total study costs* that exceed the amount of credit afforded for *in-kind contributions* determined in accordance with paragraph F. of this Article and the Non-Federal Sponsors shall be responsible for 100 percent of all costs of *in-kind contributions* included in *total study costs* that exceed the amount of credit afforded.

H. Upon conclusion of the *period of study*, the Government shall conduct an accounting, in accordance with Article IV.C. of this Agreement, and furnish the results to the Non-Federal Sponsors.

I. The Non-Federal Sponsors shall not use *Federal program funds* to meet any of its obligations for the *Study* under this Agreement unless the Federal agency providing the funds verifies in writing that such funds are authorized to be used to carry out the *Study*.

J. This Agreement shall not be construed as obligating either party to implement a project. Whether the Government supports a project authorization, if authorization is required, and budgets for implementation of the project depends upon, among other things, the outcome of the *Study* and whether the proposed solution is consistent with the Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies and with the budget priorities of the Administration.

ARTICLE III - STUDY COORDINATION TEAM

A. To provide for consistent and effective communication, the Non-Federal Sponsors and the Government, not later than 30 calendar days after the effective date of this Agreement, shall appoint named senior representatives to a Study Coordination Team. Thereafter, the Study Coordination Team shall meet regularly until the end of the *period of study*. The Government's Project Manager and a counterpart named by the Non-Federal Sponsors shall co-chair the Study Coordination Team.

B. The Government's Project Manager and the Non-Federal Sponsors' counterparts shall keep the Study Coordination Team informed of the progress of the *Study* and of significant pending issues and actions, and shall seek the views of the Study Coordination Team on matters that the Study Coordination Team generally oversees.

C. Until the end of the *period of study*, the Study Coordination Team shall generally oversee the *Study*, including matters related to: plan formulation and evaluation, including applicable economic, engineering, real estate, and environmental analyses; scheduling of reports and work products; independent technical review and other review processes required by the Government; external peer review, if required; completion of all necessary environmental coordination and documentation; contract awards and modifications; contract costs; the Government's cost projections; the performance of, scheduling, and determining the value of *in-kind contributions*; determination of anticipated future requirements for real property and relocation requirements and performance of operation, maintenance, repair, rehabilitation, and replacement of the proposed project including anticipated requirements for permits; and other matters related to the *Study*. This oversight of the *Study* shall be consistent with the *PMP*.

D. The Study Coordination Team may make recommendations to the District Engineer on matters related to the *Study* that the Study Coordination Team generally oversees, including suggestions to avoid potential sources of dispute. The Government in good faith shall consider the recommendations of the Study Coordination Team. The Government, having the legal authority and responsibility for performance of the *Study* has the discretion to accept or reject, in whole or in part, the Study Coordination Team's recommendations.

E. The Non-Federal Sponsors' costs of participation in the Study Coordination Team shall be included in *total study costs* and shared in accordance with the provisions of this Agreement, subject to an audit in accordance with Article IV.C. of this Agreement to determine reasonableness, allocability, and allowability of such costs. The Government's costs of participation in the Study Coordination Team shall be included in *total study costs* and shared in accordance with the provisions of this Agreement.

ARTICLE IV - METHOD OF PAYMENT

A. In accordance with the provisions of this paragraph, the Government shall maintain current records and provide to the Non-Federal Sponsors current projections of costs, financial obligations, the contributions provided by the parties, the costs included in *total study costs* for *in-kind contributions* determined in accordance with Article II.E. of this Agreement, and the

credit to be afforded for *in-kind contributions* pursuant to Article II.F. of this Agreement.

1. As of the effective date of this Agreement, *total study costs* are projected to be \$1,400,000; the value of the Non-Federal Sponsors' contributions under Article III and Article VI of this Agreement is projected to be \$100,000; the amount of funds determined in accordance with Article II.C.1.a. of this Agreement is projected to be \$600,000; the costs included in *total study costs* for *in-kind contributions* determined in accordance with Article II.E. of this Agreement are projected to be \$0; the credit to be afforded for *in-kind contributions* pursuant to Article II.F. of this Agreement is projected to be \$100,000; the Non-Federal Sponsors' contribution of funds required by Article II.C.1.b. of this Agreement is projected to be \$600,000; and the *non-Federal proportionate share* is projected to be 46.1 percent. These amounts and percentage are estimates subject to adjustment by the Government, after consultation with the Non-Federal Sponsors, and are not to be construed as the total financial responsibilities of the Government and the Non-Federal Sponsors.

2. By April 1, 2013 and by each quarterly anniversary thereof until the conclusion of the *period of study* and resolution of all relevant claims and appeals, the Government shall provide the Non-Federal Sponsors with a report setting forth all contributions provided to date and the current projections of the following: *total study costs*; *study costs to be shared during the period of study*; the value of the Non-Federal Sponsors' contributions under Article III and Article VI of this Agreement; the amount of funds determined in accordance with Article II.C.1.a. of this Agreement; the Non-Federal Sponsors' contribution of funds required by Article II.C.1.b. of this Agreement; *excess study costs*; the amount of funds determined in accordance with Article II.D.1. of this Agreement; the Non-Federal Sponsors' contribution of funds required by Article II.D.2. of this Agreement; the costs included in *total study costs* for *in-kind contributions* determined in accordance with Article II.E. of this Agreement; the credit to be afforded for *in-kind contributions* pursuant to Article II.F. of this Agreement; the total contribution of funds required from the Non-Federal Sponsors for the upcoming contract and upcoming *fiscal year*; and the *non-Federal proportionate share*.

B. The Non-Federal Sponsors shall provide the contribution of funds required by Article II.C.1.b. of this Agreement in accordance with the provisions of this paragraph.

1. Not less than 7 calendar days after the effective date of this Agreement, the Government shall notify the Non-Federal Sponsors in writing of the funds the Government determines to be required from the Non-Federal Sponsors to meet: (a) the *non-Federal proportionate share of financial obligations to be shared during the period of study* incurred prior to the commencement of the *period of study*; (b) the projected *non-Federal proportionate share of financial obligations to be shared during the period of study* to be incurred for such contract; and (c) the projected *non-Federal proportionate share of financial obligations to be shared during the period of study* using the Government's own forces through the first *fiscal year of the Non-Federal Sponsors*. Within 30 calendar days of receipt of such notice, the Non-Federal Sponsors shall provide the Government with the full amount of such required funds by delivering a check payable to "FAO, USAED, NASHVILLE DISTRICT" to the District Engineer, or verifying to the satisfaction of the Government that the Non-Federal Sponsors have deposited such required funds in an escrow or other account acceptable to the Government, with

interest accruing to the Non-Federal Sponsors, or by presenting the Government with an irrevocable letter of credit acceptable to the Government for such required funds, or by providing an Electronic Funds Transfer of such required funds in accordance with procedures established by the Government.

2. Thereafter, until the work on the *Study* is complete, the Government shall notify the Non-Federal Sponsors in writing of the funds the Government determines to be required from the Non-Federal Sponsors, and the Non-Federal Sponsors shall provide such funds in accordance with the provisions of this paragraph.

a. The Government shall notify the Non-Federal Sponsors in writing, no later than 60 calendar days prior to the scheduled date for issuance of the solicitation for each remaining contract for work on the *Study*, of the funds the Government determines to be required from the Non-Federal Sponsors to meet the projected *non-Federal proportionate share of financial obligations to be shared during the period of study* to be incurred for such contract. No later than such scheduled date, the Non-Federal Sponsors shall make the full amount of such required funds available to the Government through any of the payment mechanisms specified in paragraph B.1. of this Article.

b. The Government shall notify the Non-Federal Sponsors in writing, no later than 60 calendar days prior to the beginning of each *fiscal year of the Non-Federal Sponsors* in which the Government projects that it will make *financial obligations to be shared during the period of study* using the Government's own forces, of the funds the Government determines to be required from the Non-Federal Sponsors to meet the projected *non-Federal proportionate share of financial obligations to be shared during the period of study* using the Government's own forces for that *fiscal year of the Non-Federal Sponsors*. No later than 30 calendar days prior to the beginning of that *fiscal year of the Non-Federal Sponsors*, the Non-Federal Sponsors shall make the full amount of such required funds for that *fiscal year of the Non-Federal Sponsors* available to the Government through any of the payment mechanisms specified in paragraph B.1. of this Article.

3. The Government shall draw from the funds provided by the Non-Federal Sponsors such sums as the Government deems necessary, when considered with any credit the Government projects will be afforded for *in-kind contributions* pursuant to Article II.F. of this Agreement, to cover: (a) the *non-Federal proportionate share of financial obligations to be shared during the period of study* incurred prior to the commencement of the *period of study*; and (b) the *non-Federal proportionate share of financial obligations to be shared during the period of study* as *financial obligations to be shared during the period of study* are incurred. If at any time the Government determines that additional funds will be needed from the Non-Federal Sponsors to cover the Non-Federal Sponsors' share of such financial obligations for the current contract or to cover the Non-Federal Sponsors' share of such financial obligations for work performed using the Government's own forces in the current *fiscal year of the Non-Federal Sponsor*, the Government shall notify the Non-Federal Sponsors in writing of the additional funds required and provide an explanation of why additional funds are required. Within 30 calendar days from receipt of such notice, the Non-Federal Sponsors shall provide the Government with the full amount of such additional required funds through any of the payment

mechanisms specified in paragraph B.1. of this Article.

C. Upon conclusion of the *period of study* and resolution of all relevant claims and appeals, the Government shall conduct a final accounting and furnish the Non-Federal Sponsors with written notice of the results of such final accounting. If outstanding relevant claims and appeals prevent a final accounting from being conducted in a timely manner, the Government shall conduct an interim accounting and furnish the Non-Federal Sponsors with written notice of the results of such interim accounting. Once all outstanding relevant claims and appeals are resolved, the Government shall amend the interim accounting to complete the final accounting and furnish the Non-Federal Sponsors with written notice of the results of such final accounting. The interim or final accounting, as applicable, shall determine *total study costs*, *study costs to be shared during the period of study*, and *excess study costs*. In addition, the interim or final accounting, as applicable, shall determine each party's required share thereof, and each party's total contributions thereto as of the date of such accounting.

1. Should the interim or final accounting, as applicable, show that the Non-Federal Sponsors' total required share of *study costs to be shared during the period of study* exceeds the Non-Federal Sponsors' total contributions provided thereto, the Non-Federal Sponsors, no later than 90 calendar days after receipt of written notice from the Government, shall make a payment to the Government in an amount equal to the difference by delivering a check payable to "FAO, USAED, NASHVILLE DISTRICT" to the District Engineer or by providing an Electronic Funds Transfer in accordance with procedures established by the Government.

2. Should the interim or final accounting, as applicable, show that the total contributions provided by the Non-Federal Sponsors for *study costs to be shared during the period of study* exceed the Non-Federal Sponsors' total required share thereof, the Government, subject to the availability of funds and as limited by Article II.G. of this Agreement, shall refund or reimburse the excess amount to the Non-Federal Sponsors within 90 calendar days of the date of completion of such accounting. In the event the Non-Federal Sponsors are due a refund or reimbursement and funds are not available to refund or reimburse the excess amount to the Non-Federal Sponsors, the Government shall seek such appropriations as are necessary to make the refund or reimbursement.

3. Should the final accounting show that the Non-Federal Sponsors' total required share of *excess study costs* exceeds the Non-Federal Sponsors' total contributions provided thereto the Non-Federal Sponsors, within the applicable time frame described below, shall make a payment to the Government in an amount equal to the difference by delivering a check payable to "FAO, USAED, NASHVILLE DISTRICT" to the District Engineer or by providing an Electronic Funds Transfer in accordance with procedures established by the Government.

a. If the project or project modification that is the subject of this *Study* will require further Congressional authorization to implement the recommended plan and:

i. the project or project modification is authorized for construction

-- then the payment shall be made no later than the date on which a Project Partnership Agreement is entered into for the project or project modification; or

ii. the project or project modification is not authorized for construction within 5 years after the date of the final Report of the Chief of Engineers concerning the project or project modification -- then the payment shall be made no later than 5 years after the date of the final Report of the Chief of Engineers; or

iii. the *Study* is terminated and the project or project modification is not authorized for construction - then the payment shall be made no later than 2 years after such termination date.

b. If the project or project modification that is the subject of this *Study* will not require further Congressional authorization to implement the recommended plan, then the payment shall be made:

i. no later than the date on which a Project Partnership Agreement is entered into for the project or project modification; or

ii. no later than 5 years after the date the decision document is duly approved by the Government; or

iii. no later than 2 years after the date of the termination of the *Study*, whichever is earliest.

ARTICLE V - DISPUTE RESOLUTION

As a condition precedent to a party bringing any suit for breach of this Agreement, that party must first notify the other party in writing of the nature of the purported breach and seek in good faith to resolve the dispute through negotiation. If the parties cannot resolve the dispute through negotiation, they may agree to a mutually acceptable method of non-binding alternative dispute resolution with a qualified third party acceptable to both parties. Each party shall pay an equal share of any costs for the services provided by such a third party as such costs are incurred. The existence of a dispute shall not excuse the parties from performance pursuant to this Agreement.

ARTICLE VI - MAINTENANCE OF RECORDS AND AUDIT

A. Not later than 60 calendar days after the effective date of this Agreement, the Government and the Non-Federal Sponsors shall develop procedures for keeping books, records, documents, or other evidence pertaining to costs and expenses incurred pursuant to this Agreement. These procedures shall incorporate, and apply as appropriate, the standards for financial management systems set forth in the Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments at 32 C.F.R. Section 33.20. The

Government and the Non-Federal Sponsors shall maintain such books, records, documents, or other evidence in accordance with these procedures and for a minimum of three years after completion of the accounting for which such books, records, documents, or other evidence were required. To the extent permitted under applicable Federal laws and regulations, the Government and the Non-Federal Sponsors shall each allow the other to inspect such books, records, documents, or other evidence.

B. In accordance with 32 C.F.R. Section 33.26, the Non-Federal Sponsors are responsible for complying with the Single Audit Act Amendments of 1996 (31 U.S.C. 7501-7507), as implemented by OMB Circular No. A-133 and Department of Defense Directive 7600.10. Upon request of the Non-Federal Sponsors and to the extent permitted under applicable Federal laws and regulations, the Government shall provide to the Non-Federal Sponsors and independent auditors any information necessary to enable an audit of the Non-Federal Sponsors' activities under this Agreement. The costs of any non-Federal audits performed in accordance with this paragraph shall be allocated in accordance with the provisions of OMB Circulars A-87 and A-133, and such costs as are allocated to the *Study* shall be included in *total study costs* and shared in accordance with the provisions of this Agreement.

C. In accordance with 31 U.S.C. 7503, the Government may conduct audits in addition to any audit that the Non-Federal Sponsors are required to conduct under the Single Audit Act Amendments of 1996. Any such Government audits shall be conducted in accordance with Government Auditing Standards and the cost principles in OMB Circular A-87 and other applicable cost principles and regulations. The costs of Government audits performed in accordance with this paragraph shall be included in *total study costs* and shared in accordance with the provisions of this Agreement.

ARTICLE VII - FEDERAL AND STATE LAWS

In the exercise of their respective rights and obligations under this Agreement, the Non-Federal Sponsors and the Government shall comply with all applicable Federal and State laws and regulations, including, but not limited to: Section 601 of the Civil Rights Act of 1964, Public Law 88-352 (42 U.S.C. 2000d) and Department of Defense Directive 5500.11 issued pursuant thereto and Army Regulation 600-7, entitled "Nondiscrimination on the Basis of Handicap in Programs and Activities Assisted or Conducted by the Department of the Army".

ARTICLE VIII - RELATIONSHIP OF PARTIES

A. In the exercise of their respective rights and obligations under this Agreement, the Government and the Non-Federal Sponsors each act in an independent capacity, and neither is to be considered the officer, agent, or employee of the other.

B. In the exercise of its rights and obligations under this Agreement, neither party shall provide, without the consent of the other party, any contractor with a release that waives or purports to waive any rights the other party may have to seek relief or redress against that contractor either

pursuant to any cause of action that the other party may have or for violation of any law.

ARTICLE IX - TERMINATION OR SUSPENSION

A. Prior to conclusion of the *period of study*, upon 30 calendar days written notice to the other party, either party may elect without penalty to terminate this Agreement or to suspend future performance under this Agreement. In the event that either party elects to suspend future performance under this Agreement pursuant to this paragraph, such suspension shall remain in effect until either the Government or the Non-Federal Sponsors elect to terminate this Agreement.

B. If at any time the Non-Federal Sponsors fail to fulfill its obligations under this Agreement, the Assistant Secretary of the Army (Civil Works) shall terminate this Agreement or suspend future performance under this Agreement unless the Assistant Secretary of the Army (Civil Works) determines that continuation of performance of the *Study* is in the interest of the United States or is necessary in order to satisfy agreements with any other non-Federal interests in connection with the *Study*.

C. In the event the Government projects that the amount of Federal funds the Government will make available to the *Study* through the then-current *fiscal year*, or the amount of Federal funds the Government will make available for the *Study* through the upcoming *fiscal year*, is not sufficient to meet the Federal share of *total study costs* that the Government projects to be incurred through the then-current or upcoming *fiscal year*, as applicable, the Government shall notify the Non-Federal Sponsors in writing of such insufficiency of funds and of the date the Government projects that the Federal funds that will have been made available to the *Study* will be exhausted. Upon the exhaustion of Federal funds made available by the Government to the *Study*, future performance under this Agreement shall be suspended. Such suspension shall remain in effect until such time that the Government notifies the Non-Federal Sponsors in writing that sufficient Federal funds are available to meet the Federal share of *total study costs* the Government projects to be incurred through the then-current or upcoming *fiscal year*, or the Government or the Non-Federal Sponsors elect to terminate this Agreement.

D. In the event that one or more of the Non-Federal Sponsors elects to terminate its responsibilities under this Agreement, and the remaining Non-Federal Sponsor(s) elects to continue to participate in the *Study*, the Government shall negotiate in good faith with the remaining Non-Federal Sponsor(s) to effect a timely and productive conclusion to that portion of the *Study* pertaining to the area of statutory authority applicable for the remaining Non-Federal Sponsor(s). The Government shall prepare a revised *PMP* and revised estimate of *total study costs* to complete that portion of the *Study* of interest to the remaining Non-Federal Sponsor(s). If the remaining Non-Federal Sponsor(s) elects to complete the *Study*, this Agreement shall be amended to reflect the negotiated revisions to the scope of the *Study* defined in Article I.A. of this Agreement and the estimate of *total study costs* in Article IV.A.1. of this Agreement. Amendments to this Agreement made pursuant to this paragraph shall reflect credits for the contribution of funds and *in-kind contributions* provided previously by all of the *Study* sponsors and shall reflect task reductions made as a result of withdrawal of any *Study* sponsor.

E. In the event that this Agreement is terminated pursuant to this Article, the parties shall conclude their activities relating to the *Study* and conduct an accounting in accordance with Article IV.C. of this Agreement. To provide for this eventuality, the Government may reserve a percentage of total Federal funds made available for the *Study* and an equal percentage of the total funds contributed by the Non-Federal Sponsor in accordance with Article II.C.1.b. of this Agreement as a contingency to pay costs of termination, including any costs of resolution of contract claims and contract modifications. Upon termination of this Agreement, all data and information generated as part of the *Study* shall be made available to the parties to the Agreement.

F. Any termination of this Agreement or suspension of future performance under this Agreement in accordance with this Article shall not relieve the parties of liability for any obligation previously incurred. Any delinquent payment owed by the Non-Federal Sponsors shall be charged interest at a rate, to be determined by the Secretary of the Treasury, equal to 150 per centum of the average bond equivalent rate of the 13 week Treasury bills auctioned immediately prior to the date on which such payment became delinquent, or auctioned immediately prior to the beginning of each additional 3 month period if the period of delinquency exceeds 3 months.

ARTICLE X - NOTICES

A. Any notice, request, demand, or other communication required or permitted to be given under this Agreement shall be deemed to have been duly given if in writing and delivered personally or sent by telegram or mailed by first-class, registered, or certified mail, as follows:

If to the Non-Federal Sponsors:

Metropolitan Government of Nashville and Davidson County
Office of the Mayor
100 Metro Courthouse
Nashville, Tennessee 37201

City of Franklin, Tennessee
Engineering Department
109 3rd Ave South
Franklin, Tennessee 37064

City of Brentwood, Tennessee
Office of the Mayor
P.O. Box 788
Brentwood, Tennessee 37204-0788

City of Brentwood, Tennessee
Engineering Department
P.O. Box 788
Nashville, Tennessee 37024-0788

Williamson County Mayor
1320 West Main Street, Ste 125
Franklin, Tennessee 37064

Williamson County Engineer
1320 West Main Street, Ste 400
Franklin, Tennessee 37064

If to the Government:

District Engineer
US Army Corps of Engineers
Nashville District
P.O. Box 1070
Nashville, Tennessee 37202-1070

B. A party may change the address to which such communications are to be directed by giving written notice to the other party in the manner provided in this Article.

C. Any notice, request, demand, or other communication made pursuant to this Article shall be deemed to have been received by the addressee at the earlier of such time as it is actually received or seven calendar days after it is mailed.

ARTICLE XI - CONFIDENTIALITY

To the extent permitted by the laws governing each party, the parties agree to maintain the confidentiality of exchanged information when requested to do so by the providing party.

ARTICLE XII - THIRD PARTY RIGHTS, BENEFITS, OR LIABILITIES

Nothing in this Agreement is intended, nor may be construed, to create any rights, confer any benefits, or relieve any liability, of any kind whatsoever in any third person not party to this Agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement, which shall become effective upon the date it is signed by the District Engineer.

DEPARTMENT OF THE ARMY

METROPOLITAN GOVERNMENT OF
NASVHILLE AND DAVIDSON COUNTY

BY: _____
James A. DeLapp
Lieutenant Colonel
Corps of Engineers

BY: _____
Karl F. Dean
Metropolitan Mayor

DATE: _____

DATE: _____

CITY OF FRANKLIN

CITY OF BRENTWOOD

BY: _____
Dr. Ken Moore
City of Franklin, TN - Mayor

BY: _____
Paul Webb
Mayor, City of Brentwood

DATE: _____

DATE: _____

WILLIAMSON COUNTY, TENNESSEE

BY: _____
Rogers Anderson
County Mayor

DATE: _____

CERTIFICATE OF AUTHORITY

I, _____, do hereby certify that I am the principal legal officer of the Metropolitan Government of Nashville and Davidson County, that the Metropolitan Government of Nashville and Davidson County is a legally constituted public body with full authority and legal capability to perform the terms of the Agreement between the Department of the Army and the Metropolitan Government of Nashville and Davidson County in connection with the feasibility study for the "Harpeth River, Tennessee Feasibility Study," and to pay damages, if necessary, in the event of the failure to perform in accordance with the terms of this Agreement and that the persons who have executed this Agreement on behalf of the Metropolitan Government of Nashville and Davidson County have acted within their statutory authority.

IN WITNESS WHEREOF, I have made and executed this certification this _____ day of _____ 20__.

Metropolitan Attorney

CERTIFICATE OF AUTHORITY

I, _____, do hereby certify that I am the principal legal officer of the City of Franklin, Tennessee, that the City of Franklin, Tennessee is a legally constituted public body with full authority and legal capability to perform the terms of the Agreement between the Department of the Army and the City of Franklin, Tennessee in connection with the feasibility study for the “Harpeth River, Tennessee Feasibility Study,” and to pay damages, if necessary, in the event of the failure to perform in accordance with the terms of this Agreement and that the persons who have executed this Agreement on behalf of the City of Franklin, Tennessee have acted within their statutory authority.

IN WITNESS WHEREOF, I have made and executed this certification this
_____ day of _____ 20__.

Shauna R. Billingsley
City of Franklin, TN – City Attorney

CERTIFICATE OF AUTHORITY

I, _____, do hereby certify that I am the principal legal officer of the City of Brentwood, Tennessee, that the City of Brentwood, Tennessee is a legally constituted public body with full authority and legal capability to perform the terms of the Agreement between the Department of the Army and the City of Brentwood, Tennessee in connection with the feasibility study for the "Harpeth River, Tennessee Feasibility Study," and to pay damages, if necessary, in the event of the failure to perform in accordance with the terms of this Agreement and that the persons who have executed this Agreement on behalf of the City of Brentwood, Tennessee have acted within their statutory authority.

IN WITNESS WHEREOF, I have made and executed this certification this
_____ day of _____ 20__.

Roger Horner
City Attorney, City of Brentwood

CERTIFICATE OF AUTHORITY

I, _____, do hereby certify that I am the principal legal officer of the Williamson County Government, that the Williamson County Government is a legally constituted public body with full authority and legal capability to perform the terms of the Agreement between the Department of the Army and the Williamson County Government in connection with the feasibility study for the "Harpeth River, Tennessee Feasibility Study," and to pay damages, if necessary, in the event of the failure to perform in accordance with the terms of this Agreement and that the persons who have executed this Agreement on behalf of the Williamson County Government have acted within their statutory authority.

IN WITNESS WHEREOF, I have made and executed this certification this _____ day of _____ 20__.

Robert Cook
County Attorney, Williamson County

CERTIFICATION REGARDING LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Karl F. Dean
Metropolitan Mayor

DATE: _____

CERTIFICATION REGARDING LOBBYING

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Dr. Ken Moore
City of Franklin, TN - Mayor

DATE: _____

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Paul Webb
Mayor, City of Brentwood

DATE: _____

CERTIFICATION REGARDING LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

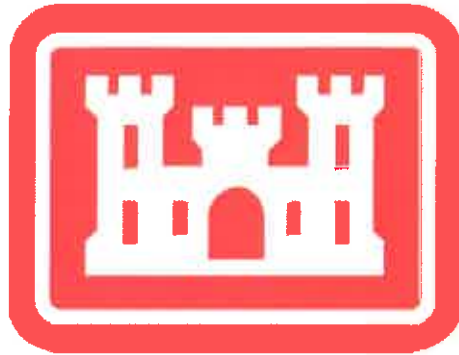
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This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Rogers Anderson
County Mayor, Williamson County

DATE: _____



Harpeth River, Tennessee

Senate Committee on Public Works Resolution dated September 19, 1973

(P2 Project Number 336718)

FY 2013

Project Management Plan (PMP)

U.S. Army Corps of Engineers, Nashville District

Revision: DRAFT

Approval Date:

Document History

Revision Number	Approval Date	Revised Section(s)	Description of Revision

Project Management Plan Approval

The undersigned individuals have approved the current version of this PMP.

Nashville PM Date

Franklin PM Date

Brentwood PM Date

Williamson County PM Date

Porter Williams, Project Manager Date

Phillip Jones, Economist Date

Mary Tipton, Biologist Date

James Bilbrey, Hydrology & Hydraulics Date

Mary Catherine Keith, Real Estate Date

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The Project Management Plan

The content of the PMP is dictated by the five tasks key to the success of a project. Those five key tasks for project success are:

- ❑ obtaining agreement on project goals and expectations (particularly regarding scope, project quality, safety, costs, and schedule);
- ❑ developing a plan for acquiring and delivering a project that meets customer expectations, objectives, and needs;
- ❑ establishing a good internal and external communications strategy;
- ❑ defining and controlling the scope of the project; and
- ❑ defining the resources necessary for project success.

1. SCOPE

The Harpeth River and its tributaries drain the 870 square mile Harpeth River Watershed with over 1,000 miles of streams. The watershed contains large portions of Williamson, Davidson, Cheatham, and Dickson counties, and small portions of Rutherford and Hickman Counties, Tennessee. The Harpeth River and its tributaries are subject to frequent flooding and major flooding every few decades, with the most recent major flood occurring in May 2010. The May 2010 flood event saw devastation throughout the watershed, causing 4 fatalities and over \$480 million in direct economic impacts in the Harpeth River Watershed alone. The Watershed also provides habitat to 6 federally listed endangered species in addition to one endemic snail species.

Preliminary reconnaissance, documented in the Harpeth River, Tennessee Section 905(b) reconnaissance report, dated May 2012, finds over 850 structures in the regulated floodplain within the basin, including several structures recognized by FEMA to be repetitive loss structures. These structures are primarily located in the City of Brentwood, the City of Franklin, Williamson County, and Davidson County. There are additional aquatic ecosystem issues found throughout the basin, primarily involving stream bank erosion and a loss of riparian buffer and/or wetlands.

The scope of this feasibility study includes both flood risk management (FRM) and ecosystem restoration (ER) analysis in the Davidson County, Williamson County, City of Brentwood, and City of Franklin area. The FRM alternatives analyzed will be geared toward regional measures that provide cross-jurisdictional benefits in the study area. Reconnaissance level analysis indicated a strong possibility for a dry dam or a configuration of multiple dry dams to effectively reduce flood risk in the primary damage centers of the basin. Additional structural and non-structural measures will be analyzed as well, and an effort will be made to develop FRM alternatives that provide ancillary ecosystem benefits.

Additionally, ER measures will be analyzed throughout the basin, particularly in the City of Franklin, which has identified areas along the main stem of the Harpeth River as potential project areas to yield aquatic ecosystem restoration benefits. Additional ecosystem restoration opportunities and measures will be analyzed in the other jurisdictions in the study area; these sites are to be identified with greater specificity during the feasibility phase of study.

Flood Risk Management Measures

Preliminary analysis shows potential net positive benefits for regional detention measures (dry dams) that would benefit Metro Nashville, Williamson County, and Franklin. A feasibility study would further investigate regional detention that would benefit the damage centers on the main stem of the Harpeth River. The study would investigate the Lampkins Bridge Road site that has been proposed as well as additional sites on the main stem of the Harpeth River and its tributaries for additional sites or optimization of a dry dam or a series of dry dams. These potential dry dam sites will be initially screened using a hydrologic analysis, and later screened using a hydraulic analysis of the system. Existing hydraulic modeling will be leveraged alongside current FEMA Flood Insurance Study (FIS) updates to expedite the hydraulic modeling process for the study.

In the damage centers, both structural and nonstructural alternatives will be considered. Initial measures will be developed based on site reconnaissance. Existing conditions hydraulics and economic impacts will yield a further refined array of measures. These measures will be grouped into alternative plans by the Project Delivery Team (PDT), and a parametric cost analysis will yield Benefit to Cost Ratios (BCRs) for the screening of alternative plans.

At this point, the National Economic Development or National Ecosystem Restoration (NED/NER) plan will be identified. Prior to progressing into a detailed analysis and detailed cost of the recommended plan, the team will get sponsor buy in, possibly resulting in moving forward with the Locally Preferred Plan (LPP) instead of the NED/NER plan.

In the City of Brentwood, where regional measures on the main stem of the Harpeth River will have no effect, select damage centers will be analyzed through updated hydrologic and hydraulic modeling. This will, in itself, provide a valuable flood preparedness tool to the City of Brentwood, and will help identify additional flood risk management options or alternatives moving forward.

Ecosystem Restoration Measures

The feasibility study scope includes analysis of ER measures in the study area. The City of Franklin has potential sites for ER along the Harpeth River. Additional sites may be later identified within the City of Brentwood, Williamson County, or Davidson County. All identified sites will undergo a screening level of analysis, with the sites with the strongest potential for beneficial impacts to the aquatic ecosystem carrying forward for further analysis.

Analysis of ER sites and opportunities includes modeling baseline conditions as well as with-project conditions using an approved habitat model. To find with-project conditions, ER measures will be

proposed and screened on the same schedule as the FRM measures, ultimately using the Cost Effectiveness/Incremental Cost Analysis (CE/ICA) software and professional judgment for selecting a recommended plan. This recommended plan will be paired with the recommended plan from the FRM analysis, unless it is deemed less efficient to do so, to yield a multi-purpose recommended plan for the feasibility study.

Study Tasks

- A. **Develop Goals and Objectives.** Problems and opportunities that were developed in the reconnaissance level of study will be confirmed. The full PDT, including sponsors, will develop goals and objectives of the feasibility study. The goals and objectives of the study will guide the course of the study. Additionally, the PDT will develop the Risk Register. The Risk Register is a tool that will be used for analyzing and screening alternatives. A sample Risk Register is attached in Appendix A. Once the Risk Register is developed, it will be incorporated into this PMP.

Once the goals and objectives of the study are developed, the PDT will determine, with input from sponsors, damage sites and potential project sites, then conduct full PDT site visits at these locations. The site visits will provide further information for the development of alternatives and their analysis, as well as potential early screening opportunities. Sites will be visited for both flood risk management and ecosystem restoration goals and objectives.

The early phases of site visits and developing goals and objectives for the study will confirm or redirect the proposed scope of work for developing baseline existing conditions and future without project conditions. As the study is currently scoped, the main stem of the Harpeth River will be modeled in HEC-RAS for both regional FRM alternatives and local FRM alternatives in the Franklin, Williamson County, and Nashville damage centers. The West Harpeth River, Murfrees Fork, and Leipers Fork will undergo hydrologic analysis to determine if further analysis of regional detention measures in the West Harpeth River subbasin is warranted. Streams in the Little Harpeth River Basin in Brentwood will be hydraulically modeled in HEC-RAS to develop existing conditions models, and to investigate the potential for both structural and nonstructural local FRM measures.

- B. **Develop Baseline Existing Conditions and Future Without Project Conditions.** For the flood risk management portion of the study, existing conditions hydrology and hydraulic modeling will be completed for those streams where deemed necessary at this point of analysis. A structure inventory will be developed to the necessary level of detail to determine baseline existing and expected future average annual damages. The Corps' FDA model will be used to develop Average Annual Damages (AADs) with the existing and future conditions hydraulics.

Once the AADs are developed and the damage centers are defined, the Full PDT will develop and preliminarily screen measures for the study. This preliminary screening will be based on all existing data and professional judgment to date, and will be largely based on the Risk Register.

For ER, environmental surveys will be performed as needed to develop baseline ecosystem conditions. This will be done using an approved model. Baseline conditions will be both current and expected future conditions. These baseline conditions, along with the data collected to this point in the study, will guide the development and initial screening of aquatic ecosystem restoration measures.

- C. **Planning Charette/Alternatives Milestone.** This charette will involve the sponsors, full PDT, and vertical team. The goal of this charette is to get Corps vertical team buy-in on the work to this point, primarily the array of alternatives for further consideration as well as the proposed evaluation criteria.
- D. **Develop and Analyze Alternative Plans.** Measures that have been approved by the Corps vertical team at the Alternatives Milestone will be modeled to determine their individual benefits. Measures seen as beneficial will be used to develop alternative plans. Alternative plans will consist of potential measures that work together. Alternative plans will be analyzed at a benefit-to-cost ratio level. Benefits will be developed for each alternative plan, and parametric costs for each plan will be developed using the design team and cost engineer.

ER measures will be analyzed using the CE/ICA software suite to determine the “best buy” plans. The CE/ICA software suite automates the process of determining the plans with the greatest net benefits and greatest marginal increase in benefits.

By the end of this level of analysis, the full PDT will be able to select both the NED and NER plans. Prior to determining the Tentatively Selected Plan (TSP) (for both FRM and ER), the full PDT will meet with the sponsors. The TSP may be the NED/NER plan, or it may be a LPP tailored to what the sponsor would be interested in implementing.

- E. **Planning Charette/Tentatively Selected Plan Milestone.** This charette will involve the sponsors, full PDT, and vertical team. The goal of this charette is to get Corps vertical team buy-in on the TSP that will be recommended for detailed cost analysis.
- F. **Planning Charette/Agency Decision Milestone.** Once the TSP milestone is complete, the study will undergo a technical review process to confirm the validity of the TSP. Upon completion of the technical review process, the sponsors, full PDT, and Corps vertical team will reconvene to confirm the TSP as the recommended plan.
- G. **Feasibility-Level Detailed Analysis on the Recommended Plan.** The PDT will develop feasibility a feasibility level cost estimate on the recommended plan. The cost engineer will develop this estimate using an appropriate level of design from the soils and structural engineering leads. At this point in the study, the real estate plan (REP) and real estate gross appraisal will be completed on the recommended plan.

After this feasibility-level detailed analysis and design is complete for the recommended plan, the decision document will be properly reviewed and will go through the feasibility study decision document approval process. The Corps team will work with the vertical team to get the report approved by the Civil Works Review Board and subsequently seek Congressional authorization for implementation of the recommended plan.

Additional Study Considerations. The PDT will also accomplish all necessary policy and planning compliance aspects of a federal Feasibility Study such as NEPA compliance, HTRW analysis and cultural resources surveys.

Study assumptions for the development for this scope and cost estimate are found in Section 4, Critical Assumptions and Constraints.

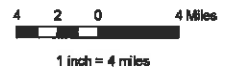
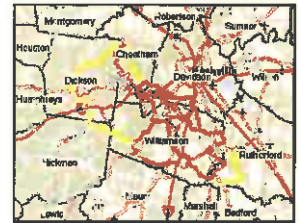
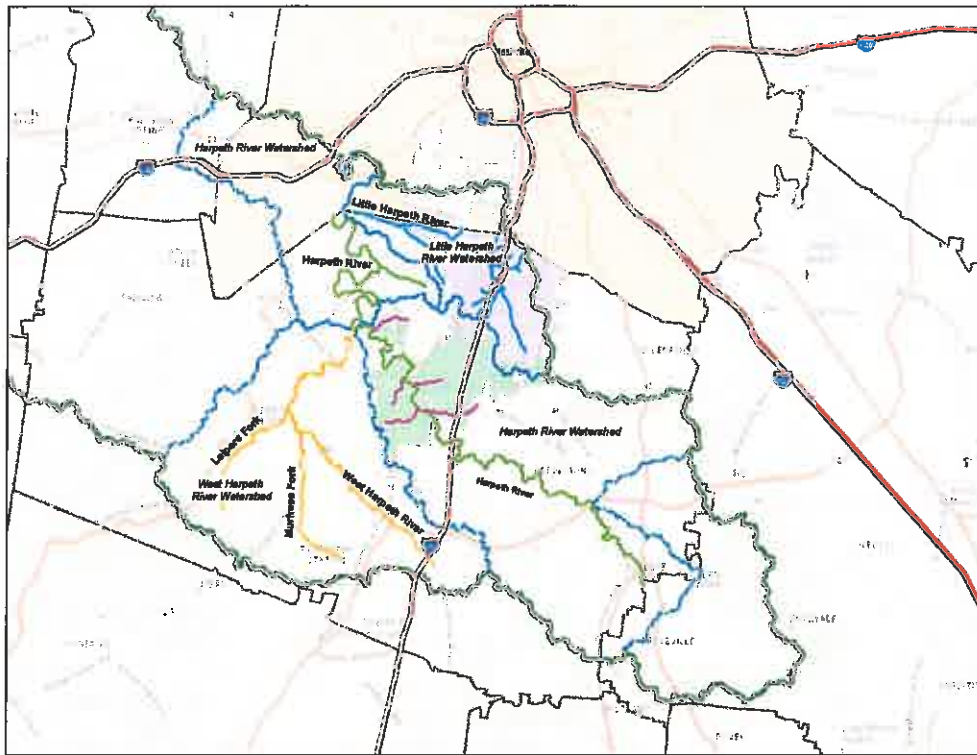


Figure 1 - Harpeth River Feasibility Study Extents, Flood Risk Management Analysis

2. PROJECT HISTORY & PATH FORWARD

Brief Project Chronology

Reconnaissance Report Signed by LRN	May 2012
Reconnaissance Report Certified by LRD	July 2012
FCSA Signed	<i>February 2013</i>

Funding History

A Feasibility Cost Share Agreement has been drafted to include the Corps of Engineers as well as Davidson County, Williamson County, the City of Franklin, and the City of Brentwood. The feasibility study cost estimate is estimated at \$1.4 million. In Q4 of FY12, the Corps reprogrammed \$12.5k to initiate the study, and expects to be able to reprogram approximately \$130k in Q2 of FY13, once the FCSA is signed.

Path Forward

A scope, schedule and cost estimate for the proposed feasibility study, all of which can be found in this PMP, have been developed. The next step is to negotiate and execute an FCSA between the Corps and all willing sponsors.

This PMP is a dynamic document which will be revised as needed as the project progresses.

3. STUDY COST ESTIMATE

Total Study Cost Estimate

The cost estimate in Table 3.1, below, is current as of the date of approval of this PMP. This cost estimate will be continually refined and revisited as the study progresses.

Task	Total Cost (\$)	Government Cost (\$) ¹	Total Sponsor Cost (\$) ²	Sponsor Costs	
				In-Kind (\$)	Cash (\$)
LiDAR	0.00	0.00	0.00	0.00	0.00
Archaeology	34000.00	18307.69	15692.31	0.00	15692.31
ATR & Reviews	90000.00	48461.54	41538.46	0.00	41538.46
Biology	69000.00	37153.85	31846.15	0.00	31846.15
Cost Engineering	44000.00	23692.31	20307.69	0.00	20307.69
Economics	69000.00	37153.85	31846.15	0.00	31846.15
Geology	23000.00	12384.62	10615.38	0.00	10615.38
Geotech	54000.00	29076.92	24923.08	0.00	24923.08
H&H	498000.00	268153.85	229846.15	0.00	229846.15
HTRW	60000.00	32307.69	27692.31	0.00	27692.31
Landscape	45000.00	24230.77	20769.23	0.00	20769.23
Plan Form	200000.00	107692.31	92307.69	0.00	92307.69
Real Estate	25000.00	13461.54	11538.46	0.00	11538.46
Structures	55000.00	29615.38	25384.62	0.00	25384.62
Contingency	34000.00	18307.69	15692.31	0.00	15692.31
Sponsor PM Involvement	100000.00	0.00	100000.00	100000.00	0.00
Grand Total	1400000.00	700000.00	700000.00	100000.00	600000.00

¹ Government Cost refers to Total Federal Government Cost, and is 50% of the total study costs. Since the "Sponsor PM Involvement" line item does not involve Federal Government Cash, but it is still cost shared as a part of total study costs, all other line items receive a share to yield a total of \$700,000 for Government Cost.

² Total Sponsor Cost is 50% of total study costs. Since the "Sponsor PM Involvement" line item is 100% Sponsor in-kind credit, all other line items receive a share to yield a total of \$700,000 for Total Sponsor Cost.

Sponsor Cost Apportionment

Based on the Estimated Study Costs of \$1.4 million, the following Table 3.1 indicates the recommended cost apportionment for each of the Non-Federal Sponsors. PM Involvement Credit is not cash, but it is sponsor labor time that is credited to the total study costs. This means that the Federal Government will match this labor contribution with a cash equivalent. The “sponsor cash” is the total cash contribution that will be required from each sponsor for the duration of the study.

	Total Study Costs by Sponsor		
	Federal Cash (\$)	PM Involvement Credit (\$)	Sponsor Cash (\$)
Franklin	280,166.17	33,333.33	246,832.84
Brentwood	50,000.00		50,000.00
Williamson	83,333.33	33,333.33	50,000.00
Nashville	286,500.49	33,333.33	253,167.16
	700,000.00	100,000.00	600,000.00

Note there is not PM Involvement Credit apportioned for Brentwood. This is due to the nature of work being performed in the Little Harpeth Basin; currently there is no alternative screening scoped for this area, but model updates and an assessment of existing conditions flooding issues.

Cost apportionment was determined in negotiation of the FCSA with all of the Sponsors.

4. TEAM IDENTIFICATION

4.1. Team Members

The PDT is responsible for the overall quality, adequacy, and accuracy of the work products required by this project, as well as the continuing adequacy and suitability of this PMP, over the life of the project. The current membership of the PDT for this project is listed in Table 4-1:

Table 4.1 – Project Delivery Team*

Name	Position	Affiliation
Jim Snyder	Nashville PM	Metro Water Services (sponsor)
Paul Holzen	Franklin PM	Franklin Engineering (sponsor)
Floyd Heflin	Williamson Co. PM	Williamson Co. Engineering (Sponsor)
Mike Harris	Brentwood PM	Brentwood Engineering (sponsor)
Porter Williams	PM	USACE PM-P
James Bilbrey	Hydrology and Hydraulics	USACE EC-H
Mary Tipton	Biologist	USACE PM-P
Phillip Jones	Economist	USACE PM-P
Kimberly Spicer	Cost Engineer	USACE EC-A
Valerie McCormack	Archaeologist	USACE PM-P
Mary Catherine Keith	Real Estate Specialist	USACE RE
Sovireak In	Structural Engineer	USACE EC-CD
Steve Matheny	Geotechnical Engineer	USACE EC-CD-S
Tong Haw	Geologist	USACE
Kathryn Firsching	Attorney	USACE OC

*This table only includes the current PDT based on the current scope of work. Historic and additional PDT members can be found below in Table 3-2.

4.2. Roles & Responsibilities

The list below includes additional contributing members to the project. The majority of these members do not have substantial roles with the current work based on the current letter agreement with Metro, however they have had contributions in the past and could well be involved again in the future, depending on the outcome of current work.

- 4.2.1. **District Project Manager: Porter Williams** – The role of the District Project Manager for the study is to lead the study team through the steps of the planning process, assisting the team throughout the study with labor and programmatic issues. The Project Manager manages the scope, schedule, and budget of the study, and ensures that the study adheres to scope, schedule, and budget.
- 4.2.2. **Sponsor, Nashville: Jim Snyder** – The sponsor will remain involved throughout the study at the Project Manger level. Sponsor involvement will help guide the direction of the study so that alternative plans that the sponsor would not consider for implementation are not a part of the recommended plan.
- 4.2.3. **Sponsor, Franklin: Paul Holzen** - The sponsor will remain involved throughout the study at the Project Manger level. Sponsor involvement will help guide the direction of the study so that alternative plans that the sponsor would not consider for implementation are not a part of the recommended plan.
- 4.2.4. **Sponsor, Brentwood: Mike Harris** - The sponsor will remain involved throughout the study at the Project Manger level. Sponsor involvement will help guide the direction of the study so that alternative plans that the sponsor would not consider for implementation are not a part of the recommended plan.
- 4.2.5. **Sponsor, Williamson County: Floyd Heflin** - The sponsor will remain involved throughout the study at the Project Manger level. Sponsor involvement will help guide the direction of the study so that alternative plans that the sponsor would not consider for implementation are not a part of the recommended plan.
- 4.2.6. **Hydraulics & Hydrology: James Bilbrey** – For a feasibility study that would look at both Flood Risk Management measures and Ecosystem Restoration projects along the Harpeth River and Little Harpeth River, there are 8 primary tasks that H&H would need to complete as part of the Feasibility Study for the Harpeth River:

Task 1: Develop a Quality Assurance/Quality Control Plan – A Quality Assurance/Quality Control (QA/QC) plan will be developed for this scope of work according to the most current Corps of Engineers standards. An in-branch review will be conducted after completion of each major task. Major tasks include, but are not limited to, hydrology, hydraulics, GIS data collection, structure database development, and alternative analysis.

Task 2: Data Collection and Assessment – A search will be conducted for existing Geographical Information System (GIS), hydraulic, and hydrologic data prior to beginning work. The data will be reviewed for completeness and, if necessary, data will be converted into a standard format for the study. Where gaps exist, additional data will be sought from other sources.

Task 3: Perform Flood Frequency Analysis – Flood frequency analysis will be performed for available stream gages using USGS annual peak stream flow data. Standard graphical

and tabular output will be developed from this analysis. Frequency results will also be compared to current flood insurance discharges where available.

Task 4: Develop Existing Conditions Hydrologic Models for Study Watersheds – This task involves the development of a Digital Elevation Model (DEM) for Hydrologic Analysis; the development of a Data Storage System (DSS) Database for hydrologic analysis; the development of the existing conditions Hydrologic Model using HEC-HMS software; and performing the existing conditions hydrologic analysis.

Task 5: Develop Existing Conditions Hydraulic Models for Study Streams – This task involves necessary field reconnaissance and GPS survey; the development of a DEM for hydraulic analysis; performing the existing conditions hydraulic analysis; and performing the 100-year floodway analysis.

Task 6: Develop Structure Database for Flood Damage Assessment (HEC-FDA software)

Task 7: Perform H&H Alternative Analysis – Using the hydrologic and hydraulic information derived from previous tasks, a comprehensive evaluation of alternatives will be conducted for the eight annual percent chance exceedence events. Alternatives include, but are not limited to, levees, channel restoration/widening, bridge modifications, regional detention, flood proofing, floodway evacuation, flood warning, and non-structural measures.

Task 8: Geospatial Data System Support

4.2.7. Biology: Mary Tipton and Chip Hall – The environmental PDT members will provide environmental/National Environmental Policy Act (NEPA) input and support for all alternative development. They will provide the NEPA analysis/compliance and any environmental planning input for the project report. That would also include public and agency coordination. They will develop any environmental benefit analysis needed for the project and collect any needed environmental data through in house or contracting mechanisms. They will lead any ecosystem restoration alternative development and support other PDT members in design of those alternatives.

They will develop any environmental benefit analysis needed for the project and collect any needed environmental data through in house or contracting mechanisms. The Cost Effectiveness/Incremental Cost Analysis (CE/ICA) process will be used to evaluate and compare various ecosystem restoration alternatives. In this process, environmental benefits determined by models (Index of Biological Integrity, Floristic Quality Assessment, U.S. Fish and Wildlife Service Habitat Suitability Indices) and costs of alternatives are used for comparisons to determine "Best Buy" plans.

4.2.8. Geotechnical Engineer: Steve Matheny - The Nashville District Soils Branch of Engineering/Construction Division will be responsible for performing all required activities for the development feasibility input into a report and if authorized plans and specifications for the geotechnical component of the project. Activities will include:

- A. Using topographic contour mapping and GIS Information to develop plans and cross sections for the project in the location specified for geotechnical input. The project as envisioned consists of structural and/or non-structural alternatives. Dry dams and/or reservoir storage may be involved as alternatives. The engineer oversees the development of all the design drawings in which the technicians use Microstation to produce Computer Aided Design Drawings (CADD).
- B. The preliminary plans are generally given to the non-Federal sponsor in advance of any meetings to see if the sponsor's desires are being adequately met. Review meetings are conducted at a mutually agreeable location.
- C. Plans and cross sections are used to derive all material quantities for the design.
- D. Quantities for the design shall be given to a cost engineer so that the cost engineer can get quotes on material and prepare both preliminary and detailed cost estimates.
- E. The technical portions of the report and/or specifications relative to the Geotechnical design are written in Geotechnical Branch. The technical portion shall be given to either Project Management or Engineering Management Support for additional application of all other appendices supplied by the various disciplines or for the inclusion of the documentation for solicitation by Contracting Division for advertisement and award of the job.
- F. The geotechnical engineer develops schedules and budgets associated with the job; provides input into planning documents such as the Project Management Plan and the Quality Control Plan. There is an internal review that occurs with a group of engineers that are totally independent from the engineers that provide the design. This is termed (ITR) Independent Technical Review. The engineers have to resolve and respond to all issues associated with the comments received. The engineer is also responsible for the Construction Branch comments that are received in the form of Biddability, Constructability, Operability and Environmental review. A legal review takes place also. If technical questions arise, the engineer takes responsibility for resolving these questions also.
- G. If necessary, the design engineers will work with the Real Estate department to establish temporary construction easements and to set take lines for obtain rights-of-entry or any permanent easements associated with the finished project.

The engineer works internally with sections such as Hydraulic, Structures, Hazardous Toxic Radiological Waste, Environmental, Regulatory, Engineering Management Support, Real Estate, Legal, Contracting and other sections of the Corps of Engineers to ensure all regulatory requirements are being met.

4.2.9. Structural Engineer: Sovireak In - The structural engineering component of the feasibility effort will be gathering information - to develop, screen, evaluate, and compare preliminary alternatives in order to identify an NED Plan. After identifying an NED plan, the feasibility

level design for the recommended alternative will be developed. Quantities from this design will be provided to Cost Engineering for development of the detailed estimate.

4.2.10. Cost Engineering: Kimberly Spicer - The Cost Engineering component of the Feasibility effort will be developing preliminary alternative estimates using parametric (abstract or previous cost information) to assist in the Alternative Formulation process. After preliminary screening of alternatives, preliminary design and quantities will be provided by the design team to Cost Engineering to assist in the development of costs to be used in the incremental cost analysis to determine which design components and alternatives appear to be cost effective. Those alternatives will then be analyzed and compared to one another to determine which has the most likelihood of Federal interest, i.e. average annual benefits exceeding the average annual costs of construction. The alternative that appears to have the highest NED benefits will be chosen as the NED Plan. Either this plan or the recommended plan will then have a Microcomputer Aided Cost Engineering System (MCACES) Software – MII Generation level estimate produced. This estimate will be developed as a “bottoms-up” approach that will have specific detail relating to the labor, equipment and material that would be required by a construction company for accomplishing the work. This estimate would also include the engineering labor, real estate, and supervisory and administrative costs during construction. Ideally only one MII level cost estimate will be produced, however depending on whether the Locally Preferred Plan (LPP) is the same as the NED Plan, an additional MII level estimate for the LPP may be warranted.

4.2.11. Economics: Phillip Jones – For the FRM portion of the study, the Economist will review the supplied structure inventory database to check for deficiencies in first floor elevations, addresses, structure ID, etc. Non-residential structures will be surveyed to determine type and estimate content value. Economist will establish depreciated replacement costs for all structures in database.

Economist will create the study in FDA model and import structure database and without project/existing conditions profiles and establish risk and uncertainly parameters. Model runs will be performed to establish without project existing average annual damages. Economist will import any H&H profiles representing measures and alternatives to be run against without project profiles to establish expected annual benefits. Economist will calculate individual structure expected annual benefits for non-structural portion of the analysis.

Economist will tabulate results and incorporate project costs to establish BCR's for all measures and alternatives proposed to identify the NED plan. Economist will write appendix with data to be used in the main portion of the report. Economist will answer all review questions and make appropriate changes in the data and the aforementioned report.

For the ER portion of the study, the Economist will input provided with and without project restoration gains into the IWR Planning Suite model to be analyzed with provided measures and alternatives to identify the “Best Buy” alternatives.

- 4.2.12. **Geologist: Tong Haw** - Potential sites for flood control will be evaluated to determine the extent geologic conditions affect constructability and costs. Subsurface information will be obtained and inspected and cost estimates made in cases where flood control proposals involve soil and/or rock removal or flood control structures are to be constructed on rock foundations.
- 4.2.13. **Cultural Resources: Valerie McCormack** – The Archaeologist’s role in the early phases of the study would be to gather information on what is already known about the cultural history, very similar to what was already accomplished during the last report.

The Archaeologist will remain involved throughout the study as plans are being developed, whether they are flood risk management or ecosystem restoration. Site visits and checking known resources will determine the probability of cultural resource investigations being necessary.

Actual cultural resource investigations and coordination for preferred projects will occur after the selection of the recommended plan. Schedule and budget for the archaeological work will depend upon the specific details of the plan. A Phased Compliance may also be POSSIBLE at this point, stating we will conduct necessary investigations during the implementation phase.

- 4.2.14. **Real Estate Specialist: Mary Catherine Keith** - Real Estate Division will have the responsibility of writing a Real Estate Plan (REP) that will accompany the Feasibility Report and that will be tailored specifically for the Harpeth River Project. The REP will ensure that adequate Real Estate analysis is conducted during project planning. The writing of the REP will take place when all of the alternative plans have been measured and the proposed plan is selected. A gross appraisal will be done as part of the REP. Additionally, the Real Estate appraiser will approve the local sponsor’s selected appraiser and provide guidance for that person with any questions they might have during the project. Real Estate will serve as a part of the PDT to provide input specific to Real Estate during the Feasibility process.

After the project is authorized (and the feasibility phase of study is complete), Real Estate will provide non-Federal Sponsor oversight and assist the Sponsor with any needs they may have with acquiring the appropriate Real Estate interests. Real Estate will certify land availability for construction and calculate the Sponsor’s credit amount for Lands, Easements, Right-of-way, Relocation and Disposal Areas (LERRDs) provided for the project.

4.2.15. HTRW: Lannae Long – The Corps is obligated under Engineer Regulation 1165-02-132 to assume responsibility for the reasonable identification and evaluation of Hazardous, Toxic, and Radioactive Waste (HTRW) contamination within the vicinity of proposed civil works projects during all project phases. The HTRW PDT member will perform a site reconnaissance and search government environmental databases to identify evidence for recognizable environmental conditions in and around each proposed project site for the Environmental Assessment (EA) and Feasibility Study (FS). If there are any recognizable HTRW conditions identified, the PDT shall take the HTRW conditions into consideration prior to the completion of the feasibility study, and make efforts to design around the HTRW condition. The HTRW PDT member will prepare limited Phase I Environmental Site Assessments (LESA) for each proposed project site, and provide the LESAs for record for an appendix to the EA and FS, and summary of the LESAs in the HTRW section of the EA and FS.

During the PED for each project, before construction, a full ESA shall be conducted. If there are any recognizable HTRW conditions identified, the PDT shall make efforts to design around the HTRW conditions. The HTRW PDT member will prepare a full Phase I ESA project site, and provided the ES for record to the project manager, and an appendix to the PED documentation.

4.2.16. Office of Counsel: Kathryn Firsching - Office of Counsel is an integral part of the PDT and is responsible for providing timely preventive advice and counsel on all aspects of project delivery. The Office of Counsel will review the draft and final versions of the Feasibility Cost Sharing Agreement, any amendments thereof, the Real Estate Memorandum of Understanding, any EA, EIS, or EIR including any ROD or FONSI, and any issue or white papers, environmental compliance issues, fish and wildlife and Endangered Species and Fish and Wildlife Act coordinations, and cultural and historic memoranda of agreement. The Office will further review final transmittal packages sent to Division or HQ, responses to Congressionals, review of correspondence, and any required legal certifications.

All correspondence and agreements regarding this project signed by the commander will be reviewed by a member of the Office of Counsel. The Office of Counsel will also provide legal advice and representation during all phases of contract formation and contract administration including support to the SSEB and the SSA as well as reviewing any proposed cure notices or show cause letters and contractor disputed requests for equitable adjustments or claims.

The Office of Counsel PDT member will attend PDT meetings, will coordinate with PDT members as appropriate, and will be available to the various working groups as needed for legal advice and counsel. The Office of Counsel PDT member will keep appropriate members of the Office of Counsel, including the District Counsel, and Lead Civil Works

Attorney, Environmental Attorney, Contract Law Attorney, and Real Estate Attorney informed of significant legal issues confronting the PDT. The Office of Counsel PDT member will also assist the PDT in coordinating reviews of documents with the appropriate attorney in the Office of Counsel.

Also, an Agency Technical Review (ATR) Team will be established as per the Project Review Plan (currently pending MSC approval). Team functions and ATR team membership are discussed in Section 9.

5. CRITICAL ASSUMPTIONS & CONSTRAINTS

Critical assumptions for the study are listed below.

H&H Concerns and Assumptions:

- No additional LiDAR acquisition will be necessary. The study is scoped assuming that Metro, Franklin, and Brentwood recent LiDAR acquisitions will be available, and that Williamson County DEM will be both available and adequate where more recent LiDAR acquisition is not available. If existing data is deemed insufficient for the proposed scope of work, LiDAR acquisition could be necessary, and thus could increase total study costs.

Geologic Concerns and Assumptions:

- There will be no need for subsurface explorations during the feasibility phase, and feasibility design concepts will not generate the need for subsurface explorations. Current cost estimate for the geology PDT member includes funding for involvement throughout the study including giving expertise where applicable and determining future needs for subsurface surveys.

Further: Within the constraints of this fiscal year total available funding, Geology section estimated that \$23,000 was the minimal funding needed to support the PDT 's recommendations for flood reduction on the Harpeth River. Initial expenditure of the available Harpeth River Feasibility Study funds, in part, provides for the determination of expectations, needs, consensus, and commitment of prospective shareholders. After local sponsors sign an agreement with the U.S. Army Corps of Engineers proposed project design concepts undergo close evaluation and are eliminated or refined and recommended for implementation. At this point Geology Section funding requirements could increase if the design proposals included channel widening in rock, bridge or road relocations, a dry dam constructed of concrete or roller compacted concrete, or hard levee structures all which require subsurface foundation exploration. A dry dam exploration program, depending upon the dimensions of the dam and appurtenances, would require a minimum of three borings which may cost about \$100,000 for the borings, laboratory testing, and analyses. Explorations costs for river channel widening to determine the Top of Rock Surface and to estimate rock excavation quantities are estimated to be about \$100,000 depending on the

extent of the proposed channel widening concept. Hard levee structures may cost about the same depending on the nature and extent of the structure.

Archaeological and Cultural Resources Concerns and Assumptions:

- The budget for the archaeological and cultural resources work does not include large scale cultural resources surveys. The necessity of these surveys will depend on the actual footprint of the recommended plan. It is known that the Harpeth River Watershed is home to many cultural resources sites, but until greater detail is known, the actual need for and cost of a cultural resources survey cannot be determined. It is also possible, and preferred if it does not threaten the implementation of the recommended plan, that cultural resources surveys could be completed in the Preconstruction Engineering and Design (PED) Phase, following the feasibility study.

Other Concerns and Assumptions:

- The inclusion of the May 2010 flood event will have a significant impact on prior analysis of flood risk management alternatives.
- Home owners will want to participate in a home buyout program.
- Real Estate acquisition for regional structural alternatives will be feasible.

Cost Assumption:

- All costs are estimated based on available data and professional judgment. As more data becomes available and level of analysis increases as the study progresses, all cost estimates will be revised and refined, and all are subject to change.

Critical constraints include:

Primary critical constraints revolve around bringing this study in compliance with the “3x3x3” initiative mandated by MG Walsh in a February 2012 memorandum. Under this new civil works directive, the feasibility phase of study is to last no longer than 3 years, cost no more than \$3 million, and the body of the feasibility report is to be of manageable length (fits into a 3 inch binder, not including technical appendices). Additionally, the new directive is a champion of 3 levels of vertical team review, or frequent meetings and consensus among district, division, and headquarters levels throughout the duration of the study.

This directive will be achieved by coming to a recommendation with less data than a traditional feasibility study, thus introducing a greater level of risk in the feasibility phase of study. Much of detailed design will be pushed to the PED phase. Plans may have to be formulated and screened with less physical data and more professional judgment than would previously have been done.

6. WORK BREAKDOWN STRUCTURE (WBS)

The following shows the Work Breakdown Structure (WBS) that is proposed at the feasibility study planning stage, prior to signing an FCSA.

1. Specify Problems and Opportunities; Development of Goals and Objectives
 - 1.1. Define Goals and Objectives for the study – Full PDT Involvement
 - 1.2. Site Visits
2. Existing Conditions and Future Without Project Conditions/Inventory
 - 2.1. Flood Risk Management
 - 2.1.1. Hydrologic and Hydraulic Modeling
 - 2.1.1.1. LiDAR Acquisition
 - 2.1.1.2. Existing Data and Modeling Acquisition
 - 2.1.1.3. Existing Conditions Hydrologic Modeling
 - 2.1.1.4. Existing Conditions Hydraulics
 - 2.1.1.4.1. Harpeth River Main Stem
 - 2.1.1.4.2. Little Harpeth River
 - 2.1.1.5. Future without project conditions hydrology (50 yr)
 - 2.1.1.6. Future without project conditions hydraulics (50 yr)
 - 2.1.2. Economic Analysis
 - 2.1.2.1. Update existing conditions structure inventory database
 - 2.1.2.2. Develop existing conditions damages
 - 2.1.2.3. Develop future without project conditions damages (50 yr)
 - 2.2. Ecosystem Restoration
 - 2.2.1. Determine HSU Model to be used for the study
 - 2.2.2. Site visits to determine firm list of ecosystem restoration sites
 - 2.2.3. Biological survey and inventory of these sites
 - 2.2.4. Determine baseline model output for both existing and future without project conditions
3. Develop Measures
 - 3.1. Develop measures to address specific flood risk issues seen in existing conditions and future without project conditions economic analysis.
 - 3.2. Preliminary screening of alternatives based on professional judgment of these proposed measures. Only move forward in analysis with the most promising alternatives
4. Evaluate Effects of Measures
 - 4.1. Flood Risk Management
 - 4.1.1. Hydraulic modeling of alternatives
 - 4.1.2. Economic analysis of hydraulic modeling using both existing and future without project conditions – determine annualized benefits of measures proposed
 - 4.2. Ecosystem Restoration
 - 4.2.1. Use habitat model to determine benefits of ecosystem alternatives

5. Develop Alternative Plans
 - 5.1. Group measures, synergistically, into specific action plans
6. Evaluate/Compare Alternative Plans
 - 6.1. Flood Risk Management
 - 6.1.1. Perform any additional hydraulic modeling for measures as needed
 - 6.1.2. Develop materials quantities to be used in parametric cost analysis
 - 6.1.3. Develop parametric cost estimate for plans
 - 6.1.4. Develop benefits for each plan (economics)
 - 6.1.5. Compare benefit-to-cost ratios for each plan to yield NER plan
 - 6.1.6. Discuss with sponsors the proposed NER plan and determine what the sponsors want to move forward with. Come away with a recommended plan.
7. Detailed analysis on selected plan
 - 7.1. Finalize detailed H&H work
 - 7.2. Finalize detailed economic analysis/benefits
 - 7.3. Complete sufficient level design for M2 Level detailed costs
 - 7.4. Develop M2 Level
 - 7.5. Perform Necessary Archaeological and HTRW Surveys for making an informed recommendation.

7. FUNDING

As stated earlier, in Q4 of FY12 the Corps reprogrammed \$12.5k to initiate the study, and expects to be able to reprogram approximately \$140k in Q2 of FY13 once the FCSA is signed. Once the FCSA is executed and sufficient funds to progress with the feasibility study are received, Table 7-1 will be filled out.

Table 7-1 shows the estimated Federal and local cash contributions. These amounts include both actual and projected expenditures.

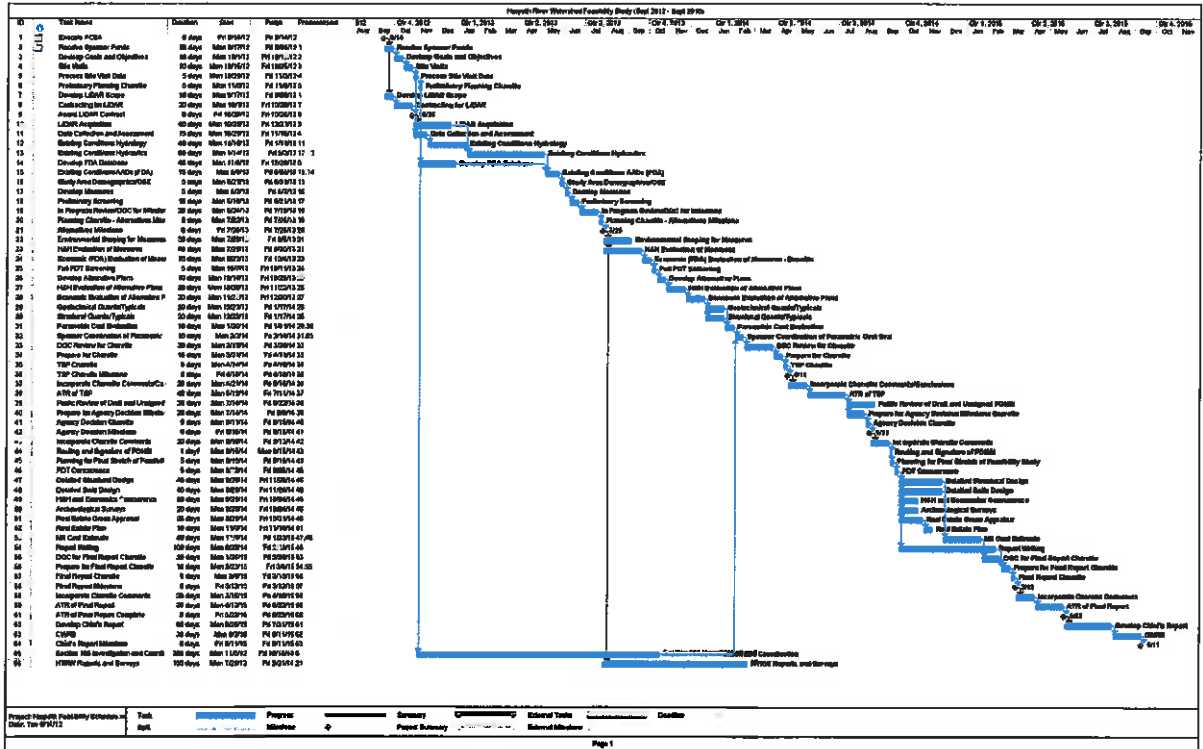
Table 7.1 - Funding

Harpeth River Watershed				
FY 12 Budget (\$1000s)				
	Sponsor Contribution	Harpeth River Flood Risk	Harpeth River Ecosystem Restoration	
Environmental	0	0	0	
Economics	0	0	0	
Plan Formulation	0	0	0	
Subtotal	0	0	0	
H&H	0	0	0	
Cost Estimating	0	0	0	
Geotech	0	0	0	
Design	0	0	0	
Real Estate	0	0	0	
ATR				
Scott Miner	0	0	0	
Mitch Laird	0	0	0	
Mike Greer	0	0	0	
H&H	0	0	0	
Cost	0	0	0	
Environmental	0	0	0	
Geotech	0	0	0	
Real Estate	0	0	0	
Subtotal ATR	0	0	0	
Printing	0	0	0	
Contingency	0	0	0	
Total Projects	0	0	0	

8. SCHEDULE

The current schedule for the Feasibility Study is shown below.

In revisions to this PMP, additional milestones will likely be identified and all milestones will be assigned dates. Those dates will correspond to the project schedule, as maintained in P2. During the life of the project, milestones will be coordinated with the PDT and updated as needed. Those changes will be documented as a revision to this PMP and in P2.



9. PROJECT QUALITY CONTROL PLAN AND OBJECTIVES

The objective of the Quality Control Plan (QCP) is to ensure the successful completion of the study and delivery of high-quality study reports and supporting documents, within budget and on time. The quality control strategy will be developed and executed in accordance with USACE PMBP REF8008G, "Quality Management Plan."

The vehicle for quality management and quality assurance of products and analysis developed throughout the Feasibility Study is in reviews. The Feasibility Study will be subject to District Quality Control (DQC), Agency Technical Review (ATR), and Independent External Peer Review (IEPR). These reviews and procedure are outlined in the Review Plan.

9.1. Project Teams

Two teams have been assigned with specific project responsibilities, which are described as follows:

- **Project Delivery Team (PDT).** The PDT is responsible for the overall quality, adequacy, and accuracy of the work products required by this project, as well as the continuing adequacy and suitability of this PMP, over the life of the project. Members of the PDT are as identified in Section 3.
- **Agency Technical Review (ATR) Team.** The ATR Team is made up of personnel with experience in the major disciplines and representatives of the local sponsor. The team's purpose is to provide a final agency review of all products to insure that the design conforms to applicable standards, policy, and guidance of the Corps of Engineers. Members of the ATR Team are as follows:

AGENCY TECHNICAL REVIEW TEAM	
<i>Name</i>	<i>Affiliation/Discipline/Position</i>
TBD	Plan Formulation
TBD	Economics
TBD	Environmental Resources
TBD	Structural Engineer
TBD	Cost Engineering
TBD	Hydraulics and Hydrology
TBD	Geotechnical Engineering
TBD	HTRW (If Needed)

TBD	Risk Analyst
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The aforementioned teams will be responsible for several processes selected to ensure that the quality requirements of the sponsor are achieved. These include:

- **Evaluation of Lessons Learned / After Action Review Information:** The PDT will evaluate the lessons learned database (per USACE PMBP PROC3020, "Lessons Learned") to determine whether or not quality issues or suggested improvements have been developed on similar projects. Relevant information will be considered in the development of the written work products for this phase of the project.
- **Periodic Team Meetings.** Meetings of the PDT will be conducted to coordinate the efforts of its members. Meetings will be of the necessary length (anticipated to be one hour or less) and will be used to discuss issues, budget and schedules. PM will be responsible for scheduling the meetings. PM will issue a meeting agenda prior to each meeting so PDT members can determine if their attendance is required. PM will provide minutes of the meetings to all PDT team members, regardless of attendance, after the meeting.

Periodic meetings will also be held that will include the sponsor PMs. These meetings will cover the same topics, but seek buy-in on the process, progress, and path forward from sponsors.

9.2. Technical Requirements

All correspondence, reports, plans and specifications for this project will use English units. Studies that are conducted as part of the overall feasibility study are subject to the technical requirements contained in the following primary references and other appropriate Corps documents, such as Policy Guidance Letters. Most of the documents in the following list can be found at www.usace.army.mil/publications/

- U.S. Army Corps of Engineers Business Process, ER 5-1-11
- Digest of Water Resources Policies and Authorities, EP 1165-2-1
- Procedures for Implementing NEPA, ER 200-2-2
- Engineering and Design for Civil Works Projects, ER 1110-2-1150
- Civil Works Cost Engineering, ER 1110-2-1302
- Technical and Policy Compliance Review, EC 1165-2-203
- Real Estate Handbook, ER 405-1-12
- Hazardous, Toxic, and Radioactive Waste Guidance for Civil Works, ER 1165-2-132

9.3. Other Requirements

None.

9.4. Quality Objectives

The sponsor's major objectives will be identified in the future, but are likely to include:

The Sponsor's major objective:

- a. Complete Feasibility ASAP within available funding.

9.5. Deliverables

The following table of project deliverables will be completed in a future revision to the PMP.

Deliverable	PDT Member	QCP Reference	QAP Reference	Completion Date	ATR/QA Team Member
Feasibility Decision Document	All				

10. ACQUISITION STRATEGY

An acquisition strategy plan will be developed once the FCSA is signed and the feasibility phase governed by this PMP is initiated.

All acquisition would be conducted in accordance with USACE **PMBP PROC2050**, "Project Delivery Acquisition Strategy."

11. RISK ANALYSIS PLAN

The major scope, quality, schedule and cost-related risks associated with the feasibility phase of this project are listed in Table 11-1; health and safety risks are discussed separately in Section 12. These risks will be assessed in accordance with USACE **PMBP REF8007G**, "Risk Management Plan" and the results will be considered in the development of the written work products required for this study.

Table 11-1: Risk Considerations

Risks related to:	Triggers	Potential Impact	Actions/Mitigation Measures
Scope	<ul style="list-style-type: none"> • Change in Corps' scope 	<ul style="list-style-type: none"> • Schedule slippage • Cost growth 	Discuss impacts with sponsor
Quality	<ul style="list-style-type: none"> • Communication errors • Loss of data • Change site conditions 	<ul style="list-style-type: none"> • Schedule slippage • Re-analysis costs • Potential redesign 	<ul style="list-style-type: none"> • Recent surveys
Schedule	<p>Slippage due to unanticipated review requirements, funding limitations, or other conditions, including:</p> <ul style="list-style-type: none"> • Environmental issues • USACE policy/legal issues • Unresolved real estate status • Unknown archaeological sites • Weather delays • Changes Site Conditions • Loss or absence of a key PDT member 	<ul style="list-style-type: none"> • Schedule slippage • Increased study costs • Requirement for new PDT member • Work stoppage • Potential redesign 	•
Cost	<ul style="list-style-type: none"> • Schedule slippage • Weather delays • Changed site condition • Unacceptable Bids 	<p>Cost growth due to:</p> <ul style="list-style-type: none"> • Extended project schedule • Requirements project redesign • Increased costs 	•

12. SAFETY & OCCUPATIONAL HEALTH (SOH) MANAGEMENT PLAN (SOHP)

All field investigations conducted in support of this project will require the conduct of Position/Activity Hazard Analyses in accordance with USACE **PMBP REF8016G**, "Safety and Occupational Health Plan", including compliance with EM 385-1-1, "Safety and Health Requirements Manual."

SOH-related risks will be examined throughout the project and will be considered in light of the project activities. Risks for this project are primarily associated with potential accidents during field activities and site visits, including risks associated with vehicle and boating safety considerations. It is anticipated that there will be environmental and physical hazards such as unstable buildings and stream banks, trip hazards (roots, etc.), quarries and other open pits, snakes, insects, bats and other wildlife.

12.1. Types of Risks

A. Site Visit Risks: During site visits, stream banks and buildings may contain environmental hazards such as mold or asbestos, and physical hazards such as unstable structures, loose debris, unstable streambanks, insects or wildlife.

Responsibility for first action: PDT members

Action: All team members will take care when working around hazardous conditions, and avoid if possible. Team members will inform the PM of any unsafe conditions encountered. The PM will then inform the Safety Office and the remainder of the PDT, including the Local Sponsor.

Cost risk: Low.

Probability: High.

B. Risks associated with vehicle and boating safety

To minimize risks associated with motor vehicles and marine safety, the PDT and A-E will comply with requirements in Section 18.E and 10.A, respectively, of EM 385-1-1.

C. Unforeseen risks:

Responsibility of first action: PM

Action: Depends upon severity and potential catastrophic nature of the risk.

- a. If the severity is catastrophic or critical and has little time tolerance, the PM will direct action to be taken and then immediately inform his superiors of the action taken. The probability for this occurring is very unlikely.
- b. If the severity is catastrophic or critical but not time sensitive, the PM will inform superiors of the situation for a District approach and call a PDT meeting to develop a detailed problem solving strategy. The probability for this occurring is very unlikely.

If the severity is moderate or negligible the PM will call a meeting of the PDT to develop a detailed problem solving strategy.

12.2. Responsibilities:

PM will:

- Initiate the development of the SOHP and ensure that it is kept current.
- Coordinate with the customer to identify and manage safety and health related hazards inherent to the project.
- Assure that hazard controls are successfully implemented.
- Coordinate with the SOH office and notify the Commander of all high-risk issues.
- Coordinate with the SOH office for necessary SOH training of the PDT.

PDT members will:

- Help develop the SOHP and identify and define potential risks and appropriate responses to risks for the project.
- Attend safety and health training necessary to develop and implement a sufficient SOHP.
- Raise issues to the PDT for resolution when a hazard control cannot be lowered to an acceptable level.

The Safety and Occupational Health Office will:

- Provide training to the PDT on the SOHP development methodology
- Serve as an advisor to the PDT, providing safety and health assistance to PDT throughout the project life cycle
- Participate in PRB and Line Item Reviews
- Provide SOH program oversight by monitoring, assessment and evaluation
- Determine the overall project risk.

The District Commander is responsible for providing final SOHP approval if the overall project risk rating is high.

The Major Subordinate Command (MSC) Commander is responsible for providing final SOHP approval if the overall project risk rating is extremely high.

PRELIMINARY HAZARD ANALYSIS

Risk	Hazard	Cause	WBS Item Affected	Impact on Project Objectives	Risk Manager	Agreed Response to Risk	Expected Result of Response
Critical, Probability is low	Bites/stings from wildlife	Natural		Cost, schedule slippage	PM, PDT	Continued awareness through Safety Meetings	Avoidance

Critical, Probability is moderate	Accidents/ trips/falls involving stream banks/bldgs, quarries, pits	Natural		Cost, schedule slippage	PM, PDT	Continued awareness or avoidance of hazard	Avoidance
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13. CHANGE MANAGEMENT PLAN

The purpose of this document is to define and manage the project’s baseline performance measurement thresholds for scope, cost, schedule, risk and quality. Other performance measurement thresholds should be considered based on the complexity and specific needs of the project.

PDT members are responsible for monitoring their work activities and identifying when changes to this PMP are necessary. Significant changes will require the generation of a change request form in P2 and updating the PMP as noted in USACE PMBP REF8009G, “Change Management Plan.” For the purposes of this project, “significant” category changes will include:

- Changed/Unknown Site Conditions;
- Congressional funding reductions;
- Sponsor-requested changes;
- Reduction in sponsor match; and
- Other significant types of changes as deemed appropriate by the PDT.

All other changes will be considered “minor” and will be documented by the PM in the PMP revision log.

13.1. Responsibilities

PM will:

- If a change is proposed, initiate the change by calling a meeting of the PDT. The change will be coordinated with the sponsors and documented in the PMP. The change will be carried across the project to adjust costs, schedule and work products accordingly.

PDT will:

- Determine if the identified changes or corrective actions have impacted the project’s Baseline PMP.
- Determine if the proposed change exceeds the project’s PMP thresholds (a project management technique in which the user specifies a threshold parameter and a lower and/or upper threshold value against which project data can be evaluated to identify issues that the project manager wants to track. An issue is automatically generated when a threshold parameter is equal to or less than the lower threshold value, or equal to or more than the upper threshold value).

13.2. Requirements and Criteria

- Baseline performance metrics and thresholds are defined during PMP development, approved by the PRB, and are updated as required during the project’s life cycle.

Performance Item	Baseline Performance Metrics
Scope	See scope earlier in this document
Cost	See cost earlier in this document
Schedule	See PMP Section 8.0
Quality	See PMP Section 9.0
Risk	See PMP Section 11.0

14. COMMUNICATIONS PLAN

The purpose of this document is to enhance synergistic relations internally and externally and determine the information needs of all project delivery team (PDT) members and stakeholders – who needs what information, when they will need it, how it will be given to them, and by whom – by reporting and distributing specific project information effectively. The complexity of the project and impacts to the PDT and stakeholders will determine the appropriate level of detail for the Communications Plan for this project.

This plan will promote a work climate that is open, informed and actively engaged. It will allow the building of effective relationships with external and internal partners, stakeholders and customers by keeping them informed of project issues and progress that impacts them. Effective communications will be timely, truthful, and open. Two-way communication is key to the project’s successful execution.

The communications strategy will be planned and executed in accordance with USACE PBMP REF8006G, “Communications Plan.”

The project will require the routine engagement and participation of many stakeholders. Stakeholders are defined as individuals or groups with direct interest, involvement, or investment in the project. For this project, in addition to Metro Water Services, Franklin, Brentwood, Williamson County, and LRN, the following stakeholders have been identified:

- Mayors of Nashville, Franklin, Brentwood, and Williamson County
- Residents of Nashville, Franklin, Brentwood, and Williamson County
- Harpeth River Watershed Association (HRWA)
- Harpeth Valley Utility District

14.1. Meeting Notes

The PDT will conduct several different types of meetings:

- **Regularly Scheduled PDT Meetings:** PDT meetings will take place approximately monthly, with the frequency depending upon the need and level of activity. The intent of these meetings is to track issues and action items, document and discuss project information, and distribute budget and schedule changes. The anticipated length of these routine team meetings is 15-60 minutes. The PM will chair these meetings and distribute a meeting memo to the PDT via email. All necessary PDT members will be invited to each meeting, with those members actively working on the current activity expected to attend. Remote members, such as the sponsor representatives, may be brought into the meeting by phone. Under the new 3x3x3 planning paradigm, the sponsors should be in attendance of monthly meetings. Having open communication lines with the sponsors throughout the life of the study should lend itself to meeting the 3x3x3 requirements.
- **Working Meetings:** Any PDT member may call a working meeting at any time to solve specific issues or coordinate study work items. The team member calling the meeting is responsible for: chairing the meeting, setting up location and time, requesting member attendance, notifying the project manager, and preparing and distributing the meeting memo.

14.2. Responsibilities

PM will:

- Initiate and facilitate development of the Communications Plan and revisions to it.
- Incorporate the Communications Plan into the project PMP.
- **Serve as the primary Corps spokesperson for the project/program, with PAO support.**
- Initiate the development of a draft communication requirements document that outlines and analyzes information needs of project stakeholders, then designs a communication strategy for each stakeholder with linkages to appropriate project milestones.
- Determine key decision points in the project according to information requirements/expectations and project schedule milestones.
- Note impacts and risk (addressed in Risk Management Plan)
- Analyze the relationship between key decision points in the project and the stakeholders' concerns.
- Develop key messages for each key decision point that consider the following characteristics for an effective message (ensure a match with project goals and objectives): Timeliness, Clarity, Honesty, Sensitivity, Relevance, Openness and Consistency
- Consolidate PDT review comments of the communications requirements document and provide enough additional information to address the recommended Communications Plan contents.
- Submit Communications Plan to the PDT for review.
- When the Communications Plan is finalized, incorporate it into the project's PMP.

PDT will:

- Assist the PM in determining all stakeholder project communications requirements, including internal communications.
- Ensure the PM and PAO are informed of potential key issues that may impact the delivery of the project/program, may engender congressional or media attention, or create a public controversy.
- Review and comment on draft stakeholder communication requirements document.
- Review the Communications Plan.

PAO will:

- Assist PM in determining all stakeholder project communications requirements, including internal communications.
- Provide Public Affairs advice, counsel and support to the PM and the PDT.
- Coordinate with the PM and PDT to develop specific products to publicize the project to internal and external audiences, including news releases, booklets, brochures, and web-based materials.
- Field calls about the project from the media and coordinate with the PM and appropriate PDT members.
- Arrange communications-related training for PM and PDT members, to include media training and risk communications training.
- Provide PA support at public functions such as meetings, signings, groundbreakings, and dedications.
- Monitor media reports about the project and ensure the PDT members and the PM are kept apprised of media activity.

PM and PDT will continuously identify and consider project stakeholders:

- Who is affected by the project?
- Who affects the project?
- How, when and why?
- Consider geography, economics, quality of life, and political sensitivity when determining internal and external interested parties.
- Document this information for easy access by the PDT, review and update as needed.
- Identify the problems, concerns and/or issues (technical, institutional, political – tribal, Federal, state, local, Environmental, Economic/Fiscal, Cultural, Safety & Health, Legal, etc) and identify how they affect the project.
- Listen, understand, and verify expectations, problems, concerns, and issues by talking with local sponsors/customers, reviewing existing documents, and talking with interest groups
- Evaluate effectiveness and document in Lessons Learned (DrChecks), as required throughout the life-cycle of the project.

PM & PAO will:

- Identify formal and nominal opinion leaders.
- Identify societal points of view that will affect the project/program.
- Identify historical/inherent prejudices that predominate.

14.3. Requirements and Criteria

The Communications Team: Communications implementation is led by the PM and executed by all PDT members. A list of the individual PDT members is included in the PMP.

Identification of Communications Issues: The PDT will identify project issues, confirm as valid and adjust by employee and stakeholder feedback and coordination with mid-level and first line supervisors.

Key project issues - The PDT has identified the following key issues:

Issue #1 – Keep the sponsor and Congressional representatives informed of project status, direction and future needs.

Issue #2 – Keep the stakeholders informed of project status and direction.

Key Messages: identify key messages for each decision point that match project goals and objectives. Audience is shown in parentheses.

- We will provide a quality product in a timely manner and within budget that meets the sponsor's needs (Sponsor)
- We will keep you informed (sponsor, A-E, Media, Public, Congressional Staff)
- Safety is our paramount concern (Public and Sponsor)

Tactics: identify tactics for consistency of purpose and one-voice communication and implementation:

- Workplace discussion
- Discussion between Sponsor and Stakeholders.

Expected Outcomes: identify outcomes and changes identified by feedback to improve communication.

- More active team membership and contributions among the PDT members.
- Better, timely communication with sponsor and Congressional interests on project status, direction and needs.

Costs: LRN costs for project communication are primarily PDT time and travel. These estimated costs will be identified in the future. Communications will focus on producing and maintaining a one-voice consistency of messages.

Measures: identify measurement for each issue identified above by surveys or other means such as feedback from commanders, middle managers, team members, and stakeholders.

Measure for Issue #1:

Help the sponsor and Congressional staff stay aware of project status and future project needs and their role in this project:

- Direct feedback from staff and sponsor.
- Measure for Issue #2:

Keep the local stakeholders informed of project status and direction.

- Direct feedback from stakeholders

Opportunities: identify opportunities to provide communications to PDT, sponsor, A-E and stakeholders.

14.4. Communications Activities

Primary activities for communicating are presented in the following table:

Activity/Milestone	Frequency	Participants	Key Message
Project Review Board Briefings	Monthly or as requested	PM, PDT members	Update PRB minutes to PRB board, Branch Chiefs and District Commander
Project Managers Meetings	Monthly	PM, PDT members	Update PRB minutes and milestones to District Commander and mid-level and first line supervisors
Team Meetings	As necessary	PM, PDT, A-E	Update PDT and supervisors (if necessary) about progress/issues on project.
Sponsor Meetings	Quarterly, or as needed.	PM, PDT, A-E, sponsor	Update Sponsor on status of project or resolve project issue.
Sponsor phone calls	As needed	PM, PDT, A-E, sponsor	Update Sponsor on status of project or resolve project issue.
A-E phone calls	Weekly or as needed	PM, PDT, A-E	Discuss project; resolve issues
Congressional Briefings	Annually	PM, Programs, Mid-level and first line supervisors	Update Congressional Representatives on project status and current work.
Emails	As needed	PM, PDT, Sponsor, mid-level and first line supervisors	Topic of discussion.

15. VALUE MANAGEMENT PLAN

The purpose of this plan is to define how Value Management (VM) will be used to seek the highest value for the project product by balancing resources and quality, using a functional analysis approach for decision-making throughout the life cycle of the product development.

The nature of the feasibility study inherently seeks to maximize value of the proposed study, and it will be the responsibility of the PDT, with buy-in from the sponsors as well as the vertical team, to see that study value is maximized.

During the Preconstruction Engineering and Design (PED) phase, a Value Management specialist will be assigned to the PDT to ensure that the design of the recommended plan achieves its highest value, balancing resources and quality.

Value Management for this project will be accomplished in accordance with USACE PMBP REF8023, "Value Management Plan."

15.1. Project VM Goals

Overall goals of the VM effort are to ensure the product development and execution processes are in compliance with Federal Laws pertaining to the use of value methodology, and to identify possible cost savings and project enhancement options.

15.2. Objectives

Specify objectives of the VM effort are to: identify possible cost savings and project enhancement options, validate current alternative strategies, identify pertinent issues that may impact the implementation and effectiveness (performance, reliability, quality, safety, life cycle costs, project costs and esthetics, etc.) of the current and alternative strategies, and provide recommendations for future research needs.

15.3. Project VM Execution

The Corps PDT will incorporate VM principles into the feasibility process (including the development and technical review activities) in such a way as not to require a separate VM study. Guidance for the VM-related activities includes USACE PMBP REF8023 and the Value Methodology Standard, by SAVE International.

16. CLOSEOUT PLAN

The purpose of this plan is to define and manage the project's closeout process. Closeout of the project will be performed in accordance with USACE PMBP PROC4000, "Activity/Project/Program Closeout." The final closeout process will not begin until after approval of the decision document. Closeout documents will be prepared as required in the closeout checklist and as described in this plan.

Administrative closeout actions include: detailing all activities, collecting project records, gathering lessons learned and archiving project information. This involves preparation of a Completion Report and close-out letter and compiling the Close-out file.

Financial closeout procedures include: closing out all contracts, terminating all labor codes and other ULOs, and summarizing the Total Project Cost in a spreadsheet which generates the proper cost-share requirements. Will also perform a project audit and prepare a letter to the sponsor informing them of the audit results.

Documents prepared in project closeout include:

- Project Audit Report
- Closeout Memos
- Completion Report
- Closeout letter to sponsor
- Form ENG3013, and
- Lessons-Learned.

The process will be conducted in accordance with standard closeout procedures outlined below and procedures outlined in the Nashville District SOP. A key reference document for close-out is [ER 5-1-11, U. S. Army Corps of Engineers Business Process](#) .

16.1. Responsibilities

PDT will –

conduct an After-Action-Review (AAR) to include:

- Preparation of a specific and detailed project assessment addressing:
 - Comparison of actual outcomes to planned execution in the baseline PMP; what went right and wrong?
 - If there is a difference between the two, discuss why
- develop recommendations to improve performance on future projects
- contractor/AE evaluations
- document results (within 90 days after project is physically complete)
- document Lessons Learned in DrChecks, if required.

PM will -

- archive the AAR report
- complete project closeout checklist below

The PDT will specify if the above products are electronic or hard copy and location of each file.

16.2. Project Closeout Checklist

17. APPROVALS

Approval of this PMP and any revisions will be made in accordance with USACE PMBP PROC2070 and LRN SOPs. The original version of this PMP (Revision 0) has been reviewed and approved by the approvers listed on [page 2](#). Approval of the PMP will be indicated in P2. All issued revised versions will

require the approval of the PDT. The sponsor will sign the cost-sharing agreement and a future revision to this PMP and will approve any future significant changes to the PMP.

18. DATA MANAGEMENT PLAN

This study is subject to the Data Management Plan requirements laid out in REF 9270F, as applicable.

Appendix A

Sample Risk Register

