

Peer Review Plan

Revised 20 March 2008

The purpose of this Peer Review Plan (PRP) for the Metropolitan Louisville-Southwest Louisville Feasibility Study is to establish the procedures and assign responsibilities for conducting the independent technical reviews of the study products and decision documents to ensure their quality and credibility. It is part of the overall Quality Control Plan (QCP) in the Project Management Plan (PMP) for the project. This PRP is compliant with the following guidance:

- EC 1105-2-408 *Peer Review of Decision Documents*, 31 May 2005,
- EC 1105-2-407, *Planning Models Improvement Program: Model Certification*, 31 May 2005
- CECW-CP Memorandum, *Peer Review Process*, 30 March 2007
- CECW-CP Memorandum, *Initiatives to Improve Accuracy of Total Project Costs in Civil Works Feasibility Studies Requiring Congressional Authorization*, 19 September 2007.

BACKGROUND

The currently authorized Southwest Louisville Project is a feasibility study of alternatives to reduce the risk of flood damage with the project area. The project area consists of the south and west portion of the Metro Louisville urban core (the former “City of Louisville” city limits). The study is being managed and conducted primarily by the Louisville District, Corps of Engineers, with input from the cost-sharing Sponsor, the Louisville-Jefferson County Metropolitan Sewer District (MSD) and technical assistance from various hired consultants.

When the original PMP was developed in 2003, the scope of study alternatives included study of detention basins, improvements in pump station capacities along levees/floodwalls, as well as non-structural measures. Analysis of problems and needs involved the development and calibration of a complex sewer system model, since virtually all of the drainage in the study area is now provided through the combined sewer system.

Initial (Stage 1) study efforts, 2003-2007, determined that over 90% of flood damages in the study area were due to basement flooding through sewer backups. The study cost-sharing sponsor, MSD, has already demonstrated that basement backups can be eliminated or substantially reduced by retrofitting basement sewer pipe connections with the addition of two valves -- an automatic back-flow check valve plus a manual sewer closure valve. The study team is now involved in Stage 2 studies -- focusing on optimizing a plan to provide such backup valves to most or all still-vulnerable buildings.

Accordingly, the alternative designs anticipated for the draft and final reports will be relatively simple and time-tested designs (i.e., valves installed in sewage service lines). This updated Peer Review Plan reflects the anticipated review required for such an analysis and report.

There remains an issue as to whether alternatives being developed under this Project would qualify for Federal construction cost-sharing, and the Sponsor is well aware of this issue. The policy issue regarding this feasibility study regards the interpretation of Corps’ Engineers’ Regulation ER 1165-2-21 *Flood Damage Reduction Measures in Urban Areas*. Typically, the Corps has not cost-shared in projects (or portions of projects) involving piped drainage systems.

However, prior to urban development in the late 1800s, the Southwest Louisville area was drained by several meandering creeks. Furthermore, the Chicago District Corps of Engineers designed and constructed the McCook Reservoir and tunnel project. The McCook project is very similar Southwest Louisville in that runoff is at some point combined in an underground system and then temporarily contained in large reservoirs. The Chicago project was authorized in the Water Resources Development Act (WRDA) of 1988.

This policy issue was discussed at an In-Progress Review Meeting with HQs on 24 January 2006, but no firm decision was reached and LRL has continued to receive funding for study completion.

PROJECT MANAGEMENT and PROJECT DELIVERY TEAM (PDT)

The following paragraphs correspond to paragraph 6.a. - 6.j. of *Engineering Circular 1105-2-408*.

a. The decision document shall be the *Metropolitan Louisville / Southwest Louisville, Kentucky Interim Feasibility Study Report*. This report shall present measures to reduce flood damages in the study area. Specific questions regarding this Peer Review Plan or the study as a whole may be made to the following designated points of contact:

The project manager for the feasibility study is:

Project Mgr., Southwest Louisville Interim Study
ATTN: CELRL-PM-PF
P.O. Box 59
Louisville, KY 40201-0059
Fax: (502) 315-6864

The Independent Technical Review Leader is:

ITR Leader, Southwest Louisville Interim Study
ATTN: CELRL-PM-PF
P.O. Box 59
Louisville, KY 40201-0059
Fax: (502) 315-6864

The peer review manager is:

Southwest Louisville Study Peer Rvw. Mgr.
Chief, CELRD PCX FRM
ATTN: CELRL-PM-P
US Army Corps of Engineers, Louisville District
600 Martin Luther King Jr. Place
Louisville, KY 40202

Flood Risk Management Planning Center of Expertise, Peer Review Plan Reviewers:

FRM-PCX Program Manager, South Pacific Division, (415) 503-6852
FRM-PCX Technical Manager, Sacramento District, (916) 557-7440

b. The Product Delivery Team (PDT) is listed in **Exhibit A**.

c. The Southwest Louisville, Kentucky, Interim Feasibility Study shall identify needs and opportunities (particularly regarding flood risks) within the study area. It is not likely to create new influential scientific information or be a highly scientific assessment. The risk and magnitude of this project are NOT such that a critical examination by a qualified team outside of the Corps not involved in the day-to-day production of a technical product is necessary. At this time it is not anticipated that any request for project authorization from Congress would involve a project of a complex, controversial, or excessively costly nature. Also, it is not expected now that implementation costs will exceed \$28 million. If in the future it would appear this report will identify costly, complex or controversial structural measures for implementation, the need for an EPR will be reconsidered. For this reason, the interim reevaluation report shall be subjected to only an Independent Technical Review (ITR), and not an EPR.

THE PEER REVIEW PROCESS

The District is responsible for reviewing the technical aspects of the draft Feasibility Report documents through an approach called peer review. The District (working with the Sponsor) is also responsible for assuring adequate public involvement in the study, and for incorporating public comments in the formulation, design, and peer review process.

The level of the peer review is commensurate with the significance of the information being reviewed. The first level, “independent technical review” or ITR, is conducted for all major documents or products of an investigation. The second level, “external peer review” or EPR, is added to the ITR process in special cases where the risk and magnitude of the proposed project is significant.

Public Review and Comment

In the first year of the Interim Feasibility Study, a public announcement (mailing) and two public meetings were held -- organized and hosted by the local Sponsor. Also, at least one radio interview was conducted with the Project Manager. As the plan formulation is nearing completion in 2008, it is clear that the NED plan is a relatively simple, non-controversial, non-structural plan involving installation of basement back-flow prevention devices in basements throughout a large part of the study area.

As part of the peer review, an Alternative Formulation Briefing (AFB) will be held prior to completing a draft report. This AFB will involving the PDT, the local Sponsor, the ITR team, Division and Corps’ Headquarters, local civic leaders, and local, state and Federal resources agencies. Later, following ITR of report documents, the Louisville District will make the draft Feasibility report (including Draft Environmental Assessment) available to the public for comment during the review process, and will facilitate a final public meeting where public input can be received. The ITR reviewers will be provided the public comments that address significant scientific or technical issues – including all comments received in the course of the study, as well as those received in response to the Draft Report review and final public meeting. Also, the public will be invited to comment on the Final Feasibility Report and Environmental Assessment.

Independent Technical Review (ITR)

ITR is the critical examination by an ITR team, which consists of Corps scientists who are not involved in the day-to-day technical work that supported the study effort and Feasibility documents. ITR is intended to confirm that the work was done in accordance with clearly established professional principles, practices, codes and criteria.

The ITR is conducted in two parts. The first is an informal, “seamless” review of individual products as they are produced. The seamless ITR is conducted throughout the study by ongoing coordination between the Project Delivery Team (PDT) and the ITR Team’s disciplinary counterparts.

The second part is a formal review of the entire Alternative Formulation Briefing (AFB) documentation and the later Draft Report and Environmental Assessment (prior to public release of the Draft report) by the entire ITR team. Both of these formal reviews are documented and the review document is included with the report package that is submitted for approval. The AFB package ITR and draft report ITR will use Dr. Checks® software to facilitate review and documentation of revisions.

There are 11 members on the Southwest Louisville Project ITR team, as listed in Exhibit B. The ITR team, consisting of Corps employees not involved in the study, was selected by the Corps based upon factors such as the project scope, complexity and size; sponsor/customer expectations; public scrutiny; life safety; technical expertise required; and other appropriate guidelines. For security purposes, the ITR Team-members’ names are not given in public versions of this document.

The ITR chairperson is a member of the Louisville District, and is also a Regional Technical Specialist in Plan Formulation. This selection is deemed appropriate (as the time of this PRP update in 2008), given that final formulation is not considering any controversial or technically complicated plan features. However, to insure full independence in hydrology and hydraulics review and economics review, the ITR members for those two disciplines are located outside of the District office. Also, due to constrained resources in LRL, an environmental reviewer from Nashville District was selected.

The Corps’ Project Manager and the PDT use project risk management principles and methods from the Project Management Institute’s Project Management Body of Knowledge in developing a project risk management plan that includes a risk assessment and analysis and a risk response plan to support the cost risk analysis. Together, the project risk management plan, along with the cost risk analysis, produces a quality assessment of the Civil Works Total Project Cost Estimate.

External Peer Review (EPR)

In accordance with EC 1105-2-408, External Peer Review (EPR) is “added to the Corps existing review process in special cases where the risk and magnitude of the proposed project are such that a critical examination by a qualified person or team outside of the Corps and not involved in the day-to-day production of a technical product is necessary.”

In this case, since the total project construction capital costs are currently expected to be under \$28 million, and since the anticipated measures (non-structural installation of sewage backflow valves) are not considered to be either controversial nor subject to design difficulties, it is not believed the EPR is required nor warranted for this study. (See also “Review Certification” below). The \$28 million cost estimate is considered reliable; it is based on the number of affected structures determined in Stage 1 initial damage estimate studies, and on considerable cost experience by the local sponsor (MSD) in performing sewage backflow retrofits in the past.

Corps District, Division and Headquarters policy reviewers have met with the Project Delivery Team and the local at key milestones in the study process, and are well aware of the ITR team’s disciplinary composition. Neither Division nor HQ reviewers have indicated any need for EPR on this project.

However, in keeping with CECW-EC memo dated 10 Sep 2007 and CECW-CP memo dated 19 Sep 2007, arrangements will be made with the CENWW Cost Estimating Center of Expertise to review the draft report’s cost estimate.

Review Certification

The Louisville District Commander will certify that the quality control process for each document has been completed and that all identified ITR and EPR technical issues have been resolved. As noted above, it is the District’s position that EPR is not warranted for this study.

REVIEW SCHEDULE

Activity	Date
Issues Resolution Conference (completed)	January 2006
ITR Alternatives Formulation Briefing document	November 2008
ITR Draft Report for Public and Agency Review	January 2009
Public Meeting	March 2009
ITR Final Report	April 2009
Civil Works Review Board	June 2009
Final Public and Agency Review	September 2009

CERTIFICATION OF PLANNING MODELS

The certification of planning models is to assure that high quality methods and tools are available to enable informed decisions on investments in the Nation’s water resources infrastructure and natural environment. In accordance with EC 1105-2-407, planning models are defined as any models and analytical tools that Corps planners use to define water resources management problems and opportunities, to formulate potential alternatives to address the problems and take advantage of the opportunities, to evaluate potential effects of alternatives and to support decision-making. They do not include engineering models used in planning. At this time, the PDT does not anticipate use of any such planning model.

METRO LOUISVILLE / SOUTHWEST LOUISVILLE KY FEASIBILITY STUDY

Product Delivery Team LEADERS LIST

as of 18 March 2008

Primary Disciplines and Sub-teams	Leader's Discipline	General Responsibilities	Address or Corps Mail DropCode
Project Manager	Civil Engineer, Systems Engr.	Schedule & executn. Proj. tech. & financial mgt. Primary liason with Sponsor & w/ LRD & Corps' HQ.	CELRL-PM-PF
Proj. Mgt. Systems Support (as needed)	P2 coordinator	Maintenance of District's Project' Mgt. Info Systems (P2 schedule data).	CELRL-PM
Local Sponsor Louisville & Jefferson Co. Metropolitan Sewer District	Civil Engineer, MSD Proj.Mgr.	Local Coordination. Coordinate MSD tech. products (in-kind work)	MSD 700 W.Liberty Louisville, KY 40203-1911
	Civil Engineer	Wet-Weather Team Leader	..
	GIS	Project Mapping	..
Engineering	Civil Engineer	Integration / execution of Engineering tasks	CELRL-ED-TH
Geotechnical Engineering	Civil Engineer	Soils & foundations	CELRL-ED-TG
Tech. Checker	Civil Engineer		
Hydraulics & Hydrology	Civil Engineer	Hydrologic & hydraulic modeling & design	CELRL-ED-TH
Tech. Checker	Civil Engineer		
Civil Design (Plan Layouts)	Civil Engineer	Civil Engrg design, layouts, & X-sections	CELRL-ED-TC
Tech. Checker	Civil Engineer		
Structural Engineering	to be determined	Structural design and analyses	CELRL-ED-DS
Tech. Checker	to be determined		
Cost Engineering	Engineering Tech.	Alternatives' cost estimates	CELRL-ED-MC
Tech. Checker	Civil Engineer		

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Note: for security reasons, names and phone numbers are not shown on web-site versions.

Primary Disciplines and Sub-teams	Leader	General Responsibilities	Address or Corps Mail DropCode
Planning	Civil Engineer	Execute Planning work per ER1105-2-100 & other Regs.	CELRL-PM-PF
LRL Planning Exec. Mgt	Chief, Planning Regional Economist	Planning Policy Review	CELRL-PM-P
Plan Formulation	Civil Engineer	Definition of Plans. Overall data integratn for comparison of plans.	CELRL-PM-PF
Tech. Checker	Civil Engineer		
Economics	Economist	Benefits / Costs + Social-Econ Impacts	CELRL-PM-PE
Tech. Checker	Economist		
Environmental & HTRW	Biologist	Environ. Assessment & HTRW	LRL-PM-PF
Tech. Checker	Biologist		
Cultural Resurces	Archaeologist	Coordinate Cult.Resource needs, & coordination with SHPO.	LRL-PM-PE
Tech. Checker	Archaeologist		
Real Estate	Real Estate Specialist	Determine RE Interests requirements, & costs. Relocation Cost Ests.	LRL-RE-C
Office of Counsel	Attorney-at-Law	Legal Certification of Study Products	LRL-OC
Construction	Civil Engineer	Review of Plans for constructability	LCD-CD-Q

EXHIBIT B

INDEPENDENT TECHNICAL REVIEW TEAM **Metropolitan Louisville / Southwest Louisville Interim Feasibility Study** **Jefferson County, Kentucky**

Primary Area of Review Responsibility	Name	Office Symbol	Unusual or Special Requirements Y / N
ITR Leader	Civil Engineer	LRL-PM-PF	N
Civil / Site Engineering	Civil Engineer	LRL-ED-T	N
Cost Engineering	Civil Engineer	LRL-ED-C	N
Economics	Economist	LRB-PM-PB Buffalo	N
Environmental and Cultural Resources	Biologist	LRN-PM-P Nashville	N
Geotechnical	Civil Engr	LRL-ED-TS	N
HTRW	Civil Engr	LRL-ED-E	N
Hydraulics	Hydraulics Engr	CELRP-TS-DD Pittsburgh	N
Plan Formulation	Civil Engineer	LRN-PM-PF Nashville	N
Real Estate	Real Estate Specialist	LRL-RE	N
Local Sponsor	Civil Engineer	MSD	N

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