



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
NORTH ATLANTIC DIVISION, US ARMY CORPS OF ENGINEERS  
FORT HAMILTON MILITARY COMMUNITY  
BROOKLYN, NEW YORK 11252-6700

JAN 11 2010

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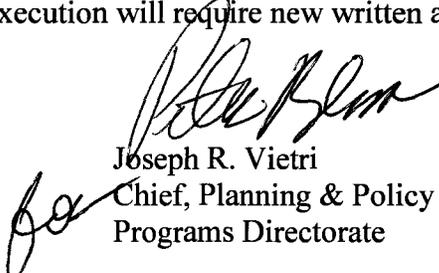
CENAD-PSD-PP

MEMORANDUM FOR Commander, New York District, ATTN: CENAN-PL

SUBJECT: Review Plan Approval for Winooski River, Montpelier, VT

1. The attached Review Plan for the Winooski River, Montpelier, VT has been prepared in accordance with EC 1165-2-209, Civil Works Review Policy.
3. The Review Plan has been coordinated with the Flood Risk Management Planning Center of Expertise of the South Pacific Division, which is the lead office to execute this plan. For further information, contact Mr. Eric Thaut at 415-503-6852. The Review Plan does not include independent external peer review.
4. I hereby approve this Review Plan, which is subject to change as study circumstances require, consistent with study development under the Project Management Business Process. Subsequent revisions to this Review Plan or its execution will require new written approval from this office.

Encl

  
Joseph R. Vietri

Chief, Planning & Policy Community of Practice  
Programs Directorate

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**REVIEW PLAN**

**WINOOSKI RIVER  
FLOOD RISK MANAGEMENT FEASIBILITY STUDY  
MONTPELIER, VERMONT**

**NEW YORK DISTRICT**

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December 2009



**US Army Corps  
of Engineers®  
New York District**

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**REVIEW PLAN**

**WINOOSKI RIVER  
FLOOD RISK MANAGEMENT FEASIBILITY STUDY  
MONTPERLIER, VERMONT**

**NEW YORK DISTRICT**

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## REVIEW PLAN

### WINOOSKI RIVER FLOOD RISK MANAGEMENT FEASIBILITY STUDY MONTPELIER, VERMONT

#### NEW YORK DISTRICT

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#### 1. Purpose

This Peer Review Plan outlines the review plan for the Winooski River Flood Damage Reduction Project in Montpelier, Vermont. Engineering Circular 1165-2-209 "Civil Works Review Policy" a) establishes procedures to ensure the quality and credibility of Corps decision documents by adjusting and supplementing the review process and b) requires that documents have a review plan. The Circular applies to all feasibility studies and reports and any other reports that lead to decision documents that require authorization by Congress.

The Corps decision document for which this Peer Review Plan is intended is the Feasibility Report for the Winooski River Flood Risk Management Feasibility Study. The Project Management Plan (PMP) that was completed and approved in November 2009 includes a review plan as required by EC 1105-2-410.

(1) District Quality Control. District Quality Control (DQC) review will be performed by staff in the home district that are not involved in the study. Additional QC will be performed by the Project Delivery Team (PDT) during the course of completing the Feasibility Study. The detailed checks of computations and methodology will be performed at the District level, and the processes for this level of review are well established. A Quality Control Plan (QCP) is included in the PMP for the subject study and addresses DQC by the MSC/District.

(2) Agency Technical Review (ATR). Reviewing the technical aspects of the decision document is accomplished through an ATR level or approach. ATR is a critical examination by a qualified person or team outside of the home district that was not involved in the day-to-day technical work that supports the decision document. ATR is intended to confirm that such work was done in accordance with clearly established professional principles, practices, codes, and criteria. In addition to technical review, documents should also be reviewed for their compliance with laws, regulations and policies. The Circular also requires that DrChecks (<https://www.projnet.org/projnet/>) be used to document all ATR comments, responses, and associated resolution accomplished. To assure independence, the leader of the ATR team shall be from outside the home MSC. This Review Plan outlines the proposed approach to meeting this requirement for the Winooski River, Feasibility Study. ATR is required for this study.

(3) Independent External Peer Review (IEPR). The Circular added independent external peer review to the existing Corps review process. This approach does not replace the standard ATR process. The independent external peer review requirement applies in special cases where the magnitude and risk of the project are such that a critical examination by a qualified person

outside the Corps is necessary. IEPR can also be used where the information is based on novel methods, presents complex interpretation challenges, contains precedent-setting methods or models, or presents conclusions that are likely to change the prevailing practices. The degree of independence required for technical review increases as the project magnitude and project risk increase. In accordance with Section 2034 of the Water Resources Development Act of 2007 (P.L. 110-114), Independent External Peer Review shall be conducted for all projects with an estimated total cost of greater than \$45M dollars. The total project costs for this project will not be in excess of this amount; planning, design and engineering is estimated to cost approximately \$7M. Further, we do not anticipate that other criteria, such as innovative solutions and life safety issues will trigger the requirement for IEPR. Therefore an IEPR is not anticipated for this document. The District expects to submit a waiver to exclude the project study from IEPR.

(4) Planning Center of Expertise (PCX) Coordination. EC 1105-2-408 and EC 1105-2-410 outline PCX coordination in conjunction with preparation of the Review Plan. This Review Plan is being coordinated with the PCX for Flood Risk Management (FRM). The FRM-PCX is responsible for the accomplishment of ATR for the Winooski River, Montpelier, Vermont Feasibility Study. The DQC is the responsibility of the MSC/District and will be conducted in accordance with the District's Quality Management Plan. The FRM-PCX may conduct the review or manage the ATR.

(5) Policy and Legal Compliance Review. In addition to the technical reviews, decision documents will be reviewed throughout the study process for their compliance with law and policy. These reviews culminate in Washington-level determinations that the recommendations in the reports and the supporting analyses and coordination comply with law and policy, and warrant approval or further recommendation to higher authority by the Chief of Engineers. Guidance for policy and legal compliance reviews is addressed further in Appendix H, ER 1105-2-100. Technical reviews described in EC 1105-2-410 are to augment and complement the policy review processes by addressing compliance with published Army polices pertinent to planning products, particularly polices on analytical methods and the presentation of findings in decision documents. DQC and ATR efforts are to include the necessary expertise to address compliance with published planning policy. When policy and/or legal concerns arise during DQC or ATR efforts that are not readily and mutually resolved by the PDT and the reviewers, the District will seek issue resolution support from the MSC and HQUSACE in accordance with the procedures outlined in Appendix H of ER 1105-2-100. Legal reviews will be conducted concurrent with ATR of the preliminary, draft and final feasibility report and environmental assessment.

(6) Review Plan Approval and Posting. In order to ensure the Review Plan is in compliance with the principles of EC 1105-2-410 and the MSC's QMP, the Review Plan must be approved by the applicable MSC, in this case the Commander, North Atlantic Division (NAD). Once the Review Plan is approved, the District will post it to its District public website and notify NAD and the FRM-PCX.

(7) Safety Assurance Review. In accordance with Section 2035 of WRDA 2007, EC 1105-2-410 requires that all projects addressing flooding or storm damage reduction undergo a safety assurance review during design and construction. Safety assurance factors must be considered in all reviews for those studies.

Safety assurance factors to be taken into consideration include:

- Where failure leads to significant threat to human life
- Novel methods\complexity\precedent setting models\policy changing conclusions
- Innovative materials or techniques
- Design lacks redundancy, resiliency or robustness
- Unique construction sequence or acquisition plans
- Reduced\overlapping design construction schedule

Implementation guidance for Section 2035 is under development. When guidance is issued, the study will address its requirements for addressing safety assurance factors, which at a minimum will be included in the draft report and appendices for public review. Prior to preconstruction engineering and design (PED) of the project identified for construction, a PMP will be developed that will include safety assurance review. Safety assurance review will also be accomplished during construction.

## **2. PROJECT DESCRIPTION**

A. Decision Document. The purpose of this study is to identify and evaluate Flood Risk Management (FRM) options in the Winooski River Basin, in Washington County, Vermont. The decision document, a Feasibility Report, will present planning, engineering and implementation details of the recommended plan to allow final design and construction to proceed subsequent to approval of the plan. The effort is a General Investigations funded study undertaken to evaluate structural and non-structural flood risk management measures, including but not limited to, floodwalls, levees, and channel modifications. The Feasibility Study is cost shared 50/50 with the project partner, the City of Montpelier, Vermont.

If the Feasibility report results in a supported recommended plan, the report will be sent to USACEHQ for approval and eventually to Congress for authorization for Planning, Engineering, Design and Construction. If total project costs fall under the limit of a Section 205 Flood Risk Management Continuing Authorities Program, there may be a recommendation to implement the project under this authority which would not require Congressional Authorization. Continued coordination with the vertical team throughout the course of the feasibility study will ensure that this recommendation, if made, is with full support from the vertical team as well as the PDT and project stakeholders.

B. General Site Description. The study area lies along the Winooski River. The Winooski River is one of the major rivers in Vermont, with its headwaters in the Town of Cabot and its point of discharge into Lake Champlain (about ninety miles of total river length). The total drainage area for the Winooski River is approximately 1,080 square miles. The study area consists of the section of Montpelier which lies within the 500 year fluvial floodplain of the Winooski River and its tributaries. The study area limits begin at City of Montpelier/Town of Middlesex Town line and extends approximately 5.5 miles up the Winooski River to the City of Montpelier/Town of Berlin line. The study area also extends approximately .5 miles up the Dog River, .75 miles up the North Branch, and .5 miles of the Stevens Branch of the Winooski River.

C. Project Scope. Due to the considerable amount of effort that has been put into studying the Winooski River and flood conditions that affect the City, the Corps will utilize as many existing

studies and as much existing data as possible. Some data from the 1994 Reconnaissance study has been determined to be relevant for use in the proposed Feasibility Study. Additionally the City and the State have put a great amount of resources and time into studying the River and proposing flood reduction measures on their own. No structural flood control measures have been constructed since the 1994 Reconnaissance Study.

Changes in existing conditions since 1994 as well as a change in the focus for the study have since occurred. Changes in existing conditions within the project area require the Study to include new data collection and inclusion of new technology for flood risk management. Further, this feasibility study will not focus on reduction of fluvial flood induced damages but will rather focus on reducing damages that occur as a result of ice jams on the Winooski River.

The scope of work for the feasibility study is laid out in the Project Management Plan which was approved in November 2009. Data collected to support the study will be done by a team made up of NAN technical offices, an approved AE, USACE's Cold Regions Research and Engineering Laboratory, the City of Montpelier Vermont (NF in-kind work will be limited to a structure inventory survey). All data collected to support the study will be subject to the same review process for technical acceptability and quality assurance.

The most challenging aspect of the study will most likely be identifying flood risk management measures that can be constructed within the constraints of the small project area as the flood plain has largely been developed.

D. Problems and Opportunities. The primary water resources problem within the Winooski River Basin is flooding to downtown Montpelier, Vermont induced by ice jams.

The study area within Montpelier has always been subject to ice jam floods due to the relatively steep river gradient upstream of the study area and float gradients downstream. Flood damages have continually increased since the City was initially settled in the 1700's because of development in and around the floodplain. Current development within the flood plain of the study area is subjected to inundation, surcharge seepage, and structural damage from ice jams and the resulting increase of the water surface of the river.

The basic objective of the plan formulation process is to identify and evaluate solution to the serious flooding problems which occur in the study area as a result of the ice jam-induced flooding, while at the same time protecting the existing resources of the stream and surrounding environment.

E. Potential Measures. The focus of the feasibility study will be to formulate and recommend alternatives that will reduce flood damage that occurs as a result of ice jam events. The Reconnaissance Study was thorough in preliminarily screening a number of measures to address ice jam induced flooding.

As a part of the development of the Project Management Plan, the City and Corps have concurred that limited resources will be spent on the measures that were determined in the 1994 Reconnaissance Study to be unfavorable. However for those measures that were determined to be favorable for ice jam induced flood risk management the Corps will formulate and make a

recommendation for implementation. Additionally any new technology or possible measures for flood risk management will be considered in the feasibility study.

F. Potential Significant Impacts. The data collected and the limited alternative formulation that was done as part of the 1994 Reconnaissance Study was extensive and comprehensive. The Reconnaissance study indicated that there would likely be no negative impacts or effects on cultural, historical, tribal, fish, wildlife, and endangered species. Research and coordination was done in preparation of the PMP to ensure that the same was true at present day, which it is. Therefore the PDT anticipates no significant issues will arise relate to impacts of the project area environment.

G. Project Delivery Team. The Project Delivery Team (PDT) is comprised of those individuals directly involved in the development of the decision document. Individual contact information and disciplines are presented in Appendix B. Other agencies, USFWS, EPA, FEMA etc, will be involved as stakeholders as they are normally included in Corps studies. However, it is not anticipated that there will be significant interagency interest in the study outside of the regular coordination and updates for situational awareness.

H. Vertical Team. The Vertical Team includes District Management (Resource Providers), District Support Team (DST) and the HQUSACE Regional Integration Team (RIT) staffs as well as members of the Planning Community of Practice (PCoP). Specific points of contact for the Vertical Team can be found in Appendix B.

I. Planning Model Certification. The certified computational models to be employed in the Winooski River Basin Feasibility Study have been developed by CRREL.

A two dimensional computer simulated model (DynaRICE) will be employed by CRREL to determine the design requirements for ice control structures if this is in fact the chosen alternative for flood risk management. The Terrestrial & Cryospheric Sciences Branch of CRREL conducts research on the physics, geophysics, and geochemistry of terrain-atmosphere interaction and the dynamics of terrestrial material properties forced by weather and climate. In support of their cryospheric mission, this Branch performs research advancing the fundamental understanding of snow, ice, and frozen ground properties and processes.

Recent advances in discrete element modeling make possible the direct simulation of river ice which is done at CRREL's laboaratory in Hanover, NH. Two and three dimensional computer simulation modeling can be done although CRREL also has the ability to construct physical models at their laboratories in Hanover, NH.

### **3. AGENCY TECHNICAL REVIEW PLAN**

As outlined above in paragraph 1.B. (1), the District is responsible for ensuring adequate technical review of decision documents. The responsible PDT District of this decision document is New York (NAN). It is recommended that the Flood Risk Management PCX nominate individuals to serve as the review team, however, proposed Districts to undertake the review are included in Appendix B.

A. General. An ATR Manager from a district outside of NAD will be designated for the ATR process by the PCX. The ATR Manager is responsible for providing information necessary for setting up the review, communicating with the New York District's Plan Formulation Section Chief, providing a summary of critical review comments, collecting grammatical and editorial comments from the ATR team (ATRT), ensuring that the ATRT has adequate funding to perform the review, facilitating the resolution of the comments, and certifying that the ATR has been conducted and resolved in accordance with policy.

B. ATR Team (ATRT). The ATRT will be comprised of individuals that have not been involved in the development of the decision document and will be chosen based on expertise, experience, and/or skills. The members will roughly mirror the composition of the PDT. It is anticipated that the team will consist of approximately 8 reviewers. The ATRT members will be identified at the time the review is conducted and will be presented in Appendix B.

C. Communication. The communication plan for the ATR is as follows:

(1) The team will use DrChecks to document the ATR process. The NAN Plan Formulation Section Chief will facilitate the creation of a project portfolio in the system to allow access by all PDT and ATRT members. An electronic version of the document, appendices, and any significant and relevant public comments shall be posted in Word format at: <ftp://ftp.usace.army.mil/pub/> at least one business day prior to the start of the comment period.

(2) The PDT shall host an ATR kick-off meeting virtually to orient the ATRT during the first week of the comment period. If funds are not available for an on-site meeting, the PDT shall provide a presentation about the project, including photos of the site, for the team.

(3) The NAN Plan Formulation Section Chief shall inform the ATR manager when all responses have been entered into DrChecks and conduct a briefing to summarize comment responses to highlight any areas of disagreement.

(4) A revised electronic version of the report and appendices with comments incorporated shall be posted at <ftp://ftp.usace.army.mil/pub/> for use during back-checking of the comments.

(5) Team members shall contact ATRT members or leader as appropriate to seek clarification of a comment's intent or provide clarification of information in the report. Discussions shall occur outside of DrChecks, but a summary of discussions may be provided in the system.

(6) Reviewers will be encouraged to contact PDT members directly via e-mail or phone to clarify any confusion. DrChecks shall not be used to post questions needed for clarification.

D. Funding

(1) The PDT district shall provide labor funding by cross charge labor codes. Funding for travel, if needed, will be provided through a government order. The NAN Plan Formulation Section Chief and the NAN Project Manager will work with the ATR manager to ensure that adequate funding is available and is commensurate with the level of review needed. The current cost estimate for each review is \$15,000 (P7, AFB, Draft Report, Final Report). Any funding shortages will be negotiated on a case by case basis and in advance of a negative charge occurring.

(2) The ATR Manager shall provide organization codes for each of the ATR team members and a responsible financial point of contact (CEFMS responsible employee) for creation of labor codes.

(3) ATRT members shall monitor individual labor code balances and alert the ATRT Manager to any possible funding shortages.

#### E. Timing and Schedule

(1) Throughout the development of this document, the team will hold planning meetings to ensure planning quality. Senior staff and subject matter experts from the PDT District and members of the vertical team (DST, PCX, Planning CoP, and RIT, as needed) will attend the meetings and provide comments on the product (2) The ATR will begin with the without project conditions, Hydrology and Hydraulics, and Economics sections of what will ultimately become the P7 Report, or Preliminary Alternatives Report. This will include the preliminary formulation, economics, and preliminary engineering design, including the H&H model. The Alternative Formulation Briefing (AFB) review will include the plan formulation process, economics, environmental assessment, preliminary engineering design, and the recommended plan. (3) The PDT will hold a “page-turn” session to review the draft report to ensure consistency across the disciplines and resolve any issues prior to the start of ATR. Writer/editor services will be performed on the draft prior to ATR as well (4) see proposed detailed schedule below.

## Proposed Study Schedule

Feasibility Cost Sharing Agreement Executed	2/1/10
NEPA Scoping Meeting/Reduced Level Public Meeting	4/16/10
Economic Flood Damage Analysis w/o project	10/8/10
Preliminary formulation & screening of alternatives	11/5/10
Interim Review of prelim. Formulation	12/1/10
Formulation Scoping Meeting	11/12/10
Alternative Formulation Briefing	2/4/11
AFB Guidance Memorandum	2/25/11
Environmental Assessment	3/11/11
Final Selected Plan	8/5/11
Interim Review of Selected Plan	9/1/11
Draft EA	2/3/12
Existing Conditions Hydrology and Hydraulics	3/16/12
District ITR	5/7/12
Draft Report Complete	5/7/12
Final EA	8/29/12
Submit Final Report and Final NEPA document to HQ for approval	8/29/12
CWRB	11/1/12
HQ Approval of FR	12/13/12

### F. Review

(1) ATRT responsibilities are as follows:

(a) ATRT members shall review the draft report(s) to confirm that work was done in accordance with established professional principles, practices, codes, and criteria and for compliance with laws and policy. Comments on the report shall be submitted into DrChecks.

(b) Reviewers shall pay particular attention to one's discipline but may also comment on other aspects as appropriate. Reviewers that do not have any significant comments pertaining to their assigned discipline shall provide a comment stating as such.

(c) Grammatical and editorial comments shall not be submitted into DrChecks. Comments should be submitted to the ATR manager via electronic mail using tracked changes feature in the Word document or as a hard copy mark-up. The ATR manager shall provide these comments to the NAN Plan Formulation Section Chief.

(d) Review comments shall contain these principal elements:

- a clear statement of the concern
- the basis for the concern, such as law, policy, or guidance
- significance for the concern
- specific actions needed to resolve the comment

(e) The "Critical" comment flag in DrChecks shall not be used unless the comment is discussed with the ATR manager and the NAN Plan Formulation Section Chief first

(2) PDT Team responsibilities are as follows:

- (a) The team shall review comments provided by the ATRT members in DrChecks and provide responses to each comment using “*Concur*”, “*Non-Concur*”, or “*For Information Only*”. *Concur* responses shall state what action was taken and provide revised text from the report if applicable. *Non-Concur* responses shall state the basis for the disagreement or clarification of the concern and suggest actions to negotiate the closure of the comment.
- (b) PDT Team members shall contact the PDT and ATRT managers to discuss any “Non-Concur” responses prior to submission.

#### G. Resolution

- (1) Reviewers shall back check PDT responses to the review comments and either close the comment or attempt to resolve any disagreements. Conference calls shall be used to resolve any conflicting comments and responses.
- (2) Reviewers may “agree to disagree” with any comment response and close the comment with a detailed explanation. If reviewer and responder cannot resolve a comment, it should be brought to the attention of the ATR manager and, if not resolved by the ATR manager, it should be brought to the attention of the Chief, Planning Division, NAN who will need to sign the certification. ATRT members shall keep the ATR manager informed of problematic comments. The vertical team will be informed of any policy variations or other issues that may cause concern during HQ review.

#### H. Certification

To fully document the ATR process, a statement of technical review will be prepared. Certification by the ATR manager and the NAN Plan Formulation Section Chief will occur once issues raised by the reviewers have been addressed to the review team’s satisfaction and the final report is ready for submission for HQ review.

Indication of this concurrence will be documented by the signing of a certification statement (Appendix A). A summary report of all comments and responses will follow the statement and accompany the report throughout the report approval process. An interim certification will be provided by the ATR manager to indicate concurrence with the report to date until the final certification is performed when the report is considered final.

#### I. Alternative Formulation Briefing (AFB)

The AFB for this project will occur after the PDT has developed the alternatives to a sufficient level of detail that would allow for review of the plan formulation process. It is possible that the briefing will result in technical or policy comments from high level reviewers for resolution. The resolution of significant policy comments may result in major changes to the document. Therefore, the ATRT members will perform a review of the report to ensure that technical issues are resolved.

### **4. INDEPENDENT EXTERNAL PEER REVIEW PLAN**

The Circular added independent external peer review to the existing Corps review process. This approach does not replace the standard ATR process. The independent external peer review requirement applies in special cases where the magnitude and risk of the project are such that a critical examination by a qualified person outside the Corps is necessary. IEPR can also be used where the information is based on novel methods, presents complex interpretation challenges, contains precedent-setting methods or models, or presents conclusions that are like to change the

prevailing practices. The degree of independence required for technical review increases as the project magnitude and project risk increase. In accordance with Section 2034 of the Water Resources Development Act of 2007 (P.L. 110-114), Independent External Peer Review shall be conducted for all projects with an estimated total cost of greater than \$45M dollars. The total project costs for this project will not be in excess of this amount; planning, design and engineering is estimated to cost approximately \$7M. Further, we do not anticipate that other criteria, such as innovative solutions and life safety issues will trigger the requirement for EPR. Therefore an IEPR is not anticipated for this document. The District expects to submit a waiver to exclude the project study from IEPR.

**A. Project Magnitude.** The magnitude of this project is determined as low, as shown in Table 4.1, below. The cost of the project will not exceed \$45 million. The project is not considered complex and involves implementation of standard concepts. It is anticipated that the report will not present influential scientific information or influential scientific assessments.

**B. Project Risk.** This project is considered low, low-medium risk overall. The potential for failure is low because the project involves straight forward concepts with numerous successful national applications. The potential for controversy regarding project implementation is low because the recommended plan will take into account the public concerns. A socio-economic analysis will be prepared and at least one public meeting will be held. The uncertainty of success of the project is low-medium because the methods used for evaluating the project have been practiced at CRREL and the concept of implementing proposed project features is no longer considered innovative.

Project Risk was assessed using Table 4.2 below. Other District projects were considered as a comparison and previous project experience was also considered when making this analysis.

Table 4.1: Project Magnitude Assessment

Project Magnitude Item	Assessment Score (Low Degree to High Degree)					Score
	Low	Medium	High			
Project Schedule/Cost	1	2	3	4	5	1
Project Complexity	1	2	3	4	5	2
Project Benefits	1	2	3	4	5	3
Project Scale	1	2	3	4	5	1
<b>Avg. Project Magnitude Score</b>						<b>1.75</b>

Table 4.2: Project Risk Assessment

Project Risk Item	Assessment Score (Low Degree to High Degree)					Score
	Low	Medium	High			
Potential for Failure	1	2	3	4	5	3
Uncertainties of Predictions	1	2	3	4	5	3
Long Term Cumulative Effects/Customer Expectations	1	2	3	4	5	3
Staff Technical Experience	1	2	3	4	5	4

Failure Impact and Consequences	1	2	3	4	5	2
<b>Avg. Project Risk Assessment Score</b>						<b>3</b>

C. Vertical Team Consensus. This review plan will serve as the coordination document to obtain vertical team consensus. Subsequent to PCX concurrence, the plan will be provided to the NAD for approval. MSC approval of the plan will indicate vertical team consensus. The ATR and Public and Agency Review will serve as the main review approaches.

**5. PUBLIC AND AGENCY REVIEW**

Public review of the draft report will occur after completion of the ATR and concurrence by NAD and HQUSACE that the document is ready for public release. As such, public comments other than those provided at any public meetings held during the planning process will not be available to the review team. However, the PDT may hold an “information session” with the public to describe the recommendations and findings and to gather public opinion information. It is not anticipated that the study or proposed project will be highly controversial. The City maintains a direct line of communication with its community through its website and public/City meetings of which the topic of flooding and potential solutions is often a subject. Communication with the public and other stakeholders will continue to be an important part of the study process.

Public review of the draft report will begin approximately one (1) month after the completion of the ATR process and policy guidance memo. The period will last 30 days as required. Public review comments will be forwarded to the ATR Team Leads upon completion of the public review comment period.

A formal State and Agency review will occur concurrently with the public review. However, it is anticipated that intensive coordination with these agencies will have occurred concurrently with the planning process.

Upon completion of the review period, comments will be consolidated and addressed if needed. A comment resolution meeting will take place if needed to decide upon the best resolution of comments. A summary of the comments and resolutions will be included in the final document.

**6. PCX COORDINATION**

The appropriate PCX for this document is the National Flood Risk Management Center of Expertise located at South Pacific Division (SPD). This review plan will be submitted to the PCX Director, for approval and designation of an ATRT manager. IEPR will not be required therefore PCX coordination regarding an IEPR will not be necessary. The District expects to submit a waiver to exclude the project study from IEPR.

**7. APPROVALS**

The PDT will carry out the review plan as described. The NAN Plan Formulation Section Chief will submit the plan to the Chief, Planning and Policy Community of Practice, North



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**REVIEW PLAN**

**WINOOSKI RIVER  
FLOOD RISK MANAGEMENT FEASIBILITY STUDY  
MONTPELIER, VERMONT**

**NEW YORK DISTRICT**

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**APPENDIX A  
STATEMENT OF TECHNICAL REVIEW**

**COMPLETION OF AGENCY TECHNICAL REVIEW  
WINOOSKI RIVER  
FLOOD RISK MANAGEMENT FEASIBILITY STUDY  
MONTPELIER, VERMONT**

**WITH ENVIRONMENTAL ASSESSMENT AND APPENDICES**

The New York District has completed the project implementation report (Feasibility Report) with an Environmental Assessment and appendices for the Winooski River Flood Risk Management Feasibility Study. Notice is hereby given that an agency technical review, that is appropriate to the level of risk and complexity inherent in the project, has been conducted as defined in the Review Plan. During the agency technical review, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of: assumptions, methods, procedures, and material used in analyses; alternatives evaluated; the appropriateness of data used and level obtained; and reasonableness of the result, including whether the product meets the customer's needs consistent with law and existing Corps policy. The ATR was accomplished by an agency team composed of staff from multiple districts. All comments resulting from the ATR have been resolved.

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TBD  
NAME

Agency Technical Review Team Manager

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TBD  
NAME

Plan Formulation Section Chief  
New York District

**CERTIFICATION OF AGENCY TECHNICAL REVIEW**

A summary of all comments and responses is attached. Significant concerns and the explanation of the resolution are as follows:

*(Describe the major technical concerns, possible impact and resolution)*

As noted above, all concerns resulting from the agency technical review of the study have been fully resolved.

\_\_\_\_\_  
NAME  
Chief, Planning Division  
New York District

\_\_\_\_\_  
Date

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**REVIEW PLAN**

**WINOOSKI RIVER  
FLOOD RISK MANAGEMENT FEASIBILITY STUDY  
MONTPELIER, VERMONT**

**NEW YORK DISTRICT**

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**APPENDIX B**

**REVIEW PLAN TEAMS**

**PROJECT DELIVERY TEAM**

Name	Discipline	Phone	Email
Jenifer Thalhauser	Project Management	(917) 790-8632	<a href="mailto:Jenifer.E.Thalhauser@usace.army.mil">Jenifer.E.Thalhauser@usace.army.mil</a>
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Laura Singer	Plan Formulation/Economics	x-8606	<a href="mailto:Laura.E.Singer@usace.army.mil">Laura.E.Singer@usace.army.mil</a>
Nancy Brighton	Section Chief, Environmental Analysis	x-8703	<a href="mailto:Nancy.J.Brighton@usace.army.mil">Nancy.J.Brighton@usace.army.mil</a>
Kimberly Rightler	Biology/NEPA	x-8722	<a href="mailto:Kimberly.A.Rightler@usace.army.mil">Kimberly.A.Rightler@usace.army.mil</a>
Carissa Scarpa	Cultural Resources	x-8612	<a href="mailto:Carissa.A.Scarpa@usace.army.mil">Carissa.A.Scarpa@usace.army.mil</a>
Stanley Nuremberg	Real Estate	x-8436	<a href="mailto:Stanley.Nuremberg@usace.army.mil">Stanley.Nuremberg@usace.army.mil</a>
Angelo Trotto	Chief, Engineering Civil Works Branch	x-8296	<a href="mailto:Angelo.R.Trotto@usace.army.mil">Angelo.R.Trotto@usace.army.mil</a>

**AGENCY TECHNICAL REVIEW TEAM**

Name	Discipline	Possible Review District**
TBD	ATR Manager/Plan Formulation	South Pacific Division (SPD); Alaska District
TBD	Civil Design	Alaska
TBD	Biology/NEPA	New England
TBD	Hydrology/Hydraulics	Alaska
TBD	Economics	Baltimore
TBD	Cost-Engineering*	New England
TBD	Real Estate	Philadelphia
TBD	Cultural Resources	St. Louis

\* The cost engineering team member nomination will be coordinated with the NWW Cost Estimating Center of Expertise as required. NWW will determine if the cost estimate will need to be reviewed by PCX staff. \*\*All resumes will be reviewed and approved by the PCX prior to initiating any ATR.

**AGENCY TECHNICAL REVIEW TEAM DISCIPLINE DESCRIPTIONS**

Discipline-Specific Guidance & Requirements. ATR Team representation is required in the disciplines listed below. In general, the ATR team members will each have a minimum of 15 years experience in their respective discipline and hold a Professional Engineer license where applicable. A statement of qualifications is required for each team member prior to acceptance as an ATR Team member and for any subsequent changes thereto.

Hydrology & Hydraulics: Team member will be an expert in the field of ice hydrology & hydraulics, have a thorough understanding of the dynamics of the both open channel flow systems, enclosed systems, application of ice piers for ice breakup, effects of best management practices and low impact development on hydrology, approaches that can benefit water quality, application of ice retention structures in an urban environment with space constraints, non-structural measures where applicable including non-structural solutions involving non-structural

alternatives related to flood proofing. The team member will have an understanding of computer modeling techniques that will be used for this project.

**Structural:** Team member will have a thorough understanding of non-structural measures, ice retention structures and other ice breakup structures typically associated with ice jam flooding. A certified professional engineer is recommended though not required.

**Mechanical:** Engineering disciplines other than Mechanical may be acceptable for review of this area of work subject to meeting the experience requirement stated above.

**Geotechnical:** Team member will have extensive experience in ice retention structure design, post-construction evaluation, and rehabilitation. A certified professional engineer is recommended.

**Economics:** Team member will have extensive experience in related flood risk management projects, and have a thorough understanding of HEC-FDA.

**Plan Formulation:** Team member will be familiar with watershed level projects, current flood risk management planning and policy guidance, and have experience in plan formulation for multipurpose projects, specifically integrating measures for flood risk management, ecosystem restoration, recreation, a watershed approach, and planning in a collaborative environment.

**Civil / Site / Utilities / Relocations:** This discipline may require a dedicated team member, or may be satisfied by structural or geotechnical reviewer, depending on individual qualifications. Team member will have experience in utility relocations, positive closure requirements and internal drainage for levee construction, and application of non-structural flood risk management, specifically flood proofing. A certified professional engineer is suggested.

**Cost Estimating:** Team member will be familiar with cost estimating for similar projects using MCACES. Team member will be a Certified Cost Technician, Certified Cost Consultant, or Certified Cost Engineer. A separate process and coordination is also required through the Walla Walla District DX for cost engineering.

Other disciplines/functions involved in the project include Hazardous/Toxic Waste, Environmental/NEPA, Real Estate, Cultural Resources, and Legal. In each case, any required Independent Technical Review within these disciplines may be accomplished within District or by other independent sources. The general experience requirements and principles contained in this document also apply to these disciplines/functional areas.

(Exception: Legal review is not under the purview of the ATR Manager but is instead responsible to the Corps of Engineers Office of Counsel chain-of-command).

**ATR Manager.** One member of the ATR Team will act as the ATR manager. Manager designation will be finalized based on input from the PCX. The ATR manager shall, in addition to discipline-specific review requirements, be responsible for:

Acting as a liaison between the Project Development Team and the ATR Team

In conjunction with the NAN Plan Formulation Section Chief, the ATR manager will perform active coordination of the ATR process and study findings with the Corps Flood Risk Management Center of Expertise (FRM) in South Pacific Division, and ensure compliance with an adequate level of FRM review.

Distributing information for review and coordinating efforts of the ATR Team. Ensuring that individual ATR Team members are operating IAW the guidelines established for ATR by EC 1105-2-410. The ATR team is not geographically co-located. Therefore, it is of paramount importance that the ATR Manager be capable of organizing the total ATR efforts across District and Division boundaries. A substitute ATR Manager from the ATR team will be named by the ATR Manager for periods of extended (over 60 days) absence.

**VERTICAL TEAM**

Name	Discipline	Phone	Email
Thomas J. Hodson	NAN Plan Formulation Branch Chief	917-790-8602	Thomas.J.Hodson@usace.army.mil
Anthony Ciorra	NAN PPMD Civil Works Branch Chief	917-790-8208	Anthony.ciorra@usace.army.mil
Leonard J. Houston	NAN Environmental Analysis Branch Chief	917-790-8702	Leonard.houston@usace.army.mil
Robert Alpern	NAN Civil Resources Branch Chief	917-790-8273	Robert.L.Alpern@usace.army.mil
Peter Blum	NAD Planning CoP	718-765-7066	Peter.R.Blum@usace.army.mil
Joe Forcina	NAD DST Lead	718-765-7084	Joseph.Forcina@usace.army.mil
Wes Coleman	NAD RIT	202-761-5782	Wesley.E.Coleman@usace.army.mil
Eric Thaut	FRM PCX Lead	415-503-6852	Eric.w.thaut@usace.army.mil
Others as necessary			