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4 Circular
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DEPARTMENT OF THE ARMY
U.S. Army Corps of Engineers
Washington, DC 20314-1000

EC 1165-2-217

6 EXPIRES TBD

7 Water Resources Policies and Authorities
8 IMPLEMENTATION OF EXECUTIVE ORDER 11988, FLOODPLAIN MANAGEMENT,
9 AND EXECUTIVE ORDER 13690, ESTABLISHING A FEDERAL FLOOD RISK
10 MANAGEMENT STANDARD AND A PROCESS FOR FURTHER SOLICITING AND
11 CONSIDERING STAKEHOLDER INPUT
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13 1. Purpose. The purpose of this Engineer Circular (EC) is to
14 establish general policy and guidance for Corps of Engineers
15 (Corps) implementation of Executive Order (EO) 11988, Floodplain
16 Management, as amended by EO 13690, Establishing a Federal Flood
17 Risk Management Standard and a Process for Further Soliciting
18 and Considering Stakeholder Input¹ for most Corps actions, except
19 for those taken under the Corps Regulatory Program. The
20 applicability of floodplain management policy to the Corps
21 Regulatory Program is discussed elsewhere, at 33 CFR 320.4(1).
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23 a. This EC rescinds Engineer Regulation (ER) 1165-2-26,
24 Implementation of Executive Order 11988 on Floodplain
25 Management, published in March 1984, and expires on TBD.
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27 b. Corps policies and program guidance that referenced ER
28 1165-2-26 will be updated to reflect the requirements in this
29 EC.
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31 2. Applicability. This EC is applicable to all Corps
32 Headquarters elements, Major Subordinate Commands (MSCs),
33 District Commands, and Field Operating Activities (FOAs) having
34 Civil Works responsibility, except that this EC is not
35 applicable to the Corps Regulatory Program executed under the
36 Clean Water Act (33 USC 1344), Sections 9 and 10 of the Rivers
37 and Harbors Act of 1899 (33 USC 401, 403), and Section 103 of
38 the Ocean Dumping Act (33 USC 1413).
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40 3. Distribution Statement. Approved for public release;
41 distribution is unlimited.
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¹ All references in this EC to "EO 11988" are to Executive Order 11988, as amended by Executive Order 13690, unless otherwise stated.

43 4. References.

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a. Public Law (PL) 84-99 (33 U.S.C. 701n), Flood Control & Coastal Emergencies, 18 August 1941.

b. 33 CFR 320.4(1), General Procedures for evaluating permit applications, floodplain management.

c. 33 U.S.C. 408, Taking possession of, use of, or injury to harbor or river improvements, 3 March 1899.

d. Executive Order 11988, Floodplain Management, 24 May 1977.

e. Executive Order 13690, Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input, 30 January 2015.

f. Water Resources Council, Guidelines for Implementing Executive Order 11988, Floodplain Management, and Executive Order 13690, Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input, (80 FR 6400), 8 October 2015.

g. Water Resources Council, Principles and Requirements for Federal Investments in Water Resources, March 2013, and Interagency Guidelines, December 2014.²

h. Federal Flood Risk Management Standard, 30 January 2015.

i. U.S. Army Corps of Engineers, Engineering Circular 1165-2-216, Policy and Procedural Guidance for Processing Requests to Alter U.S. Army Corps of Engineers Civil Works Projects Pursuant to 33 USC 408, 31 July 2014.

j. U.S. Army Corps of Engineers, Engineering Regulation 1100-2-8162, Incorporating Sea Level Change in Civil Works Programs, 31 December 2013.

²In response to report language in its annual appropriations act, the Corps has not developed guidance to implement the 2013 Principles and Requirements for Federal Investments in Water Resources or the 2014 Interagency Guidance. Instead, the Corps has been using the 1983 Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies for planning proposed water resources projects and actions.

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k. U.S. Army Corps of Engineers, Engineering Regulation 1105-2-100, Planning Guidance Notebook, 22 April 2000.

1. Attached Glossary, which provides explanations of key terms relevant to this EC.

5. Background and Objectives of the Orders. The original version of EO 11988, Floodplain Management, was signed 24 May 1977. It requires federal agencies to provide leadership and take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out actions related to: 1.) acquiring, managing, and disposing of federal lands and facilities; 2.) providing federally undertaken, financed, or assisted construction and improvements; and 3.) conducting federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.

a. EO 11988 requires agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid the direct or indirect support of floodplain development whenever there is a practicable alternative. The Order requires federal agencies to recognize the significant values of floodplains, to minimize potential harm to people, property, and floodplain values, and to consider the public benefits that would be realized from restoring and preserving natural and beneficial floodplain values. Under EO 11988, the Corps is required to provide leadership and take action to: avoid development in the floodplain unless it is the only practicable alternative; reduce the risk associated with floods; minimize potential harm to people and property and to natural and beneficial floodplain values from actions in floodprone areas; and restore and preserve the natural and beneficial values of the floodplain.

b. EO 13690, Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input, issued 30 January 2015, amended EO 11988 and established the Federal Flood Risk Management Standard (FFRMS) to improve the Nation's resilience to current and future flood

124 risks. Pursuant to EO 13690, the Water Resources Council issued
125 updated Guidelines for Implementing Executive Order 11988,
126 Floodplain Management, and Executive Order 13690, Establishing a
127 Federal Flood Risk Management Standard and a Process for Further
128 Soliciting and Considering Stakeholder Input on 8 October 2015
129 (Implementation Guidelines). The Implementation Guidelines
130 provide additional guidance to federal agencies implementing the
131 requirements of EO 11988 and EO 13690. The primary changes that
132 EO 13690 made to EO 11988 were to introduce requirements to:
133

134 (1) Expand management from the base flood elevation to a
135 higher vertical flood elevation and corresponding horizontal
136 floodplain for certain actions.
137

138 (2) Use higher standards for actions determined to be
139 critical actions as described in Section 7a.
140

141 (3) Where possible, use natural systems, ecosystem processes,
142 and nature-based approaches in the development of alternatives
143 for all actions to which EO 11988 applies.
144

145 6. Use of this EC. The following describes what actions this EC
146 applies to in general. Policy and procedural documents
147 applicable to these actions will be updated to include more
148 specific policies and procedures related to determining and
149 documenting compliance with this EC.
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151 a. By its terms, the requirements of EO 11988 apply to: 1.)
152 acquiring, managing, and disposing of federal lands and
153 facilities; 2.) providing federally undertaken, financed, or
154 assisted construction and improvements (For Corps purposes, this
155 would include projects carried out by non-federal interests
156 under Section 204 of P.L. 99-662, as amended.); and 3.)
157 conducting federal activities and programs affecting land use,
158 including but not limited to water and related land resources
159 planning, regulating, and licensing activities. This EC applies
160 to Corps actions that fall into these categories. The floodplain
161 that must be used for the required analysis is either the FFRMS
162 floodplain or the 1-percent-annual-chance floodplain depending
163 upon the nature of the action as specified below.
164

165 (1) The FFRMS floodplain should be used in the decision
166 processes that:
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168 (a) Result in recommendations to Congress for authorization
169 of projects or modifications to previously authorized projects
170 (including non-federal feasibility studies submitted to the
171 Secretary under Section 203 of PL 99-662).
172

173 (b) Result in recommendations for the implementation of
174 projects that do not require additional Congressional
175 authorization, such as continuing authority projects or project
176 modifications within discretionary authority or projects
177 directly authorized by Congress without the benefit of a Corps
178 investigation.
179

180 (c) Are in response to a request for permission pursuant to
181 33 USC Section 408 to alter an existing and operational project
182 that was previously analyzed using the FFRMS floodplain.
183

184 (d) Are in response to a request for permission pursuant to
185 33 USC Section 408 to alter a project that directly impacts
186 Corps actions outlined in 6a(1)(a) or 6a(1)(b).
187

188 (2) The 1-percent-annual-chance floodplain should be used in
189 the analysis of other decisions related to the actions specified
190 in items 1-3 in Section 6a. This includes:
191

192 (a) Routine operations and maintenance activities specified
193 in the O&M Manual that are likely to impact the floodplain if
194 not already analyzed as part of the project authorization.
195

196 (b) Actions that are in the interest of national security, as
197 defined in the Glossary.
198

199 (c) All requests pursuant to 33 USC Section 408 to alter a
200 project not described in Sections 6a(1)(c) or 6a(1)(d).
201 Additional guidance on how to consider the appropriate
202 floodplain for these requests is described in EC 1165-2-216 or
203 the most current guidance on requests pursuant to 33 CFR Section
204 408.
205

206 b. This EC applies to any Corps action initiated on or after
207 the date of issuance of this EC. For authorization studies, the

208 EC will not apply if the tentatively selected plan has been
209 reached.

210

211 c. This EC does not apply to:

212

213 (1) The Corps Regulatory Program.

214

215 (2) Any Corps action initiated before the date of issuance of
216 this EC.

217

218 (3) Routine operations and maintenance activities that do not
219 impact or change the floodplain.

220

221 (4) Emergency flood-related activities essential to reducing
222 risk to lives, property, and public health and safety are exempt
223 from the provisions of EO 11988; however, these emergency
224 actions shall consider and comply with the intent of the EO to
225 the extent practicable.

226

227 7. General Policy. It is the policy of the Corps to formulate,
228 construct, operate, and maintain projects that, to the extent
229 possible, avoid or minimize adverse impacts associated with use
230 of the floodplain and avoid inducing development in the
231 floodplain, unless there is no practicable alternative.

232

233 a. When determining whether a Corps action is in or will have
234 adverse impacts on a floodplain, the Corps will typically use
235 one of the approaches in the FFRMS to determine the vertical
236 flood elevation and corresponding horizontal extent of the
237 floodplain as described in Section 8b, unless otherwise stated in
238 Section 6 or unless it is inappropriate for a given action. This
239 determination includes the use of higher vertical flood
240 elevations and expanded horizontal floodplain boundaries for
241 critical actions as described in the FFRMS. Where the Corps is
242 working on a project with other federal agencies, early
243 coordination is encouraged to decide how to determine the
244 vertical flood elevation and corresponding horizontal extent of
245 the floodplain, where appropriate.

246

247 b. The vertical flood elevation identified through the
248 process described in Section 7a will be used to estimate the
249 vertical and horizontal extent of the floodplain for the
250 purposes of implementing EO 11988. Additionally, it will be used
251 in considering the appropriateness of additional flood

252 resilience measures that may help ensure that the project
253 functions during a flood event of that magnitude. The Corps will
254 use this vertical flood elevation in evaluating and formulating
255 alternatives and in selecting a recommended course of action
256 based on their impacts. However, this vertical flood elevation
257 will not be used as a design standard or to provide a minimum
258 vertical elevation for use in the planning and design of Corps
259 projects that involve horizontal infrastructure (a subset of
260 "facilities" as defined in the Glossary) including, but not
261 limited to: riverine, harbor, and coastal facilities; seawalls;
262 jetties; revetments; engineered beaches and dunes; levees; and
263 interior drainage facilities.

264

265 c. Where possible and consistent with its regulations and
266 policies, the Corps will consider natural systems, ecosystem
267 processes, and nature-based approaches (collectively referred to
268 as natural and nature-based approaches) alone and in combination
269 with other structural and nonstructural measures when
270 identifying the initial array of alternatives for minimizing
271 impacts. Additional guidance on the use of natural and nature-
272 based approaches will be provided in the future.

273

274 d. Identification and evaluation of practicable alternatives
275 shall include consideration of alternative sites; alternative
276 actions; and no action. Because many Corps actions must be
277 located in the floodplain, alternatives outside the floodplain
278 may be equivalent to a "no action" alternative. In considering
279 the practicability of each alternative, both the proposed Corps
280 action and the impact of the action on the floodplain must be
281 evaluated.

282

283 e. When a determination is made that no practicable
284 alternative to undertaking an action in the floodplain exists,
285 it will be appropriately documented. The features or qualities
286 of the floodplain that make it advantageous over alternative,
287 non-floodplain sites shall be described and adequately
288 supported.

289

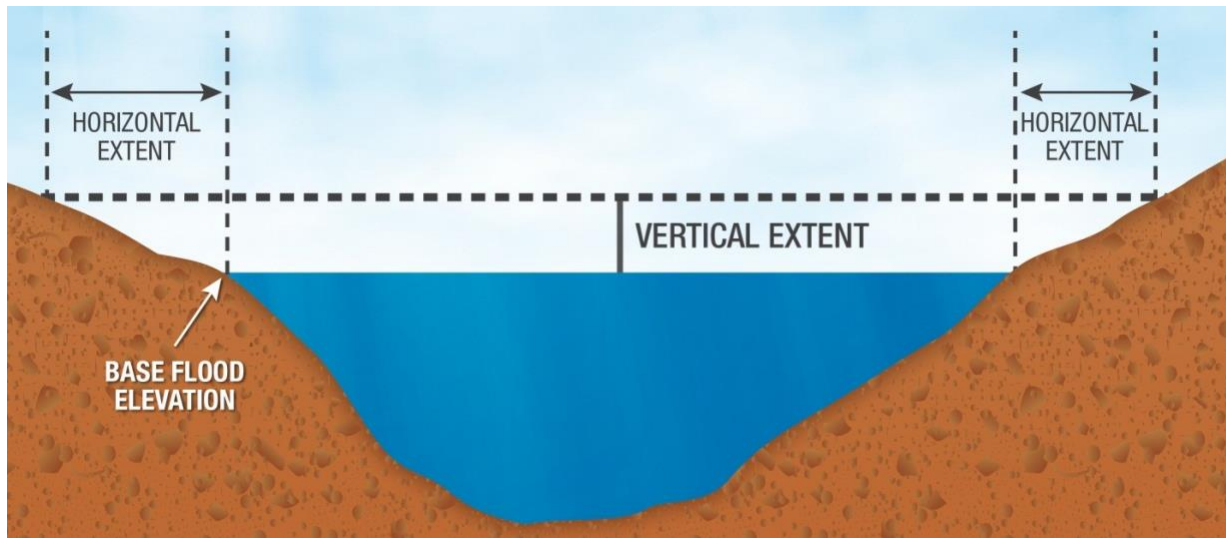
290 f. It is Corps policy that when determining that an action
291 must be taken in the floodplain, the action will be taken in
292 such a way as to minimize potential harm caused by the action
293 and to restore and preserve the natural and beneficial values of
294 the floodplain to the extent possible.

295

296 8. General Procedures. When conducting an applicable Corps
297 action as described in Sections 2 and 6, the Corps will consider
298 the eight-step decision-making process included in the
299 Implementation Guidelines and described in Sections 8a through
300 8h. The EO 11988 eight-step decision-making process is one
301 component of the broader decision-making processes that support
302 Corps actions. Flood risk and floodplain considerations included
303 in the EO 11988 eight-step decision-making process must be
304 incorporated into the plan formulation and National
305 Environmental Policy Act (NEPA) processes used to develop
306 recommended Corps actions. The Corps will consider whether the
307 action is a critical action when determining the level of
308 floodplain analyses necessary. Use of a risk assessment process
309 (ER 1105-2-101) to assist in this eight-step decision-making
310 process is encouraged.

311
312 a. Step 1 - Determine if the proposed action is in a
313 floodplain. Use the information provided in Section 6 to
314 determine whether the FFRMS floodplain or the 1-percent-annual-
315 chance floodplain should be used to determine the vertical flood
316 elevation and corresponding horizontal extent of the floodplain
317 as shown in Figure 1. There are three approaches for determining
318 the FFRMS floodplain: 1.) the Climate-informed Science Approach
319 (CISA); 2.) the Freeboard Value Approach (FVA); and 3.) the 0.2-
320 percent-annual-chance-flood (0.2PFA). All Corps actions subject
321 to the FFRMS will utilize the CISA approach, unless compelling
322 justification for using one of the other approaches is developed
323 and document. Such cases should be coordinated through the
324 vertical team as early as possible and requests should be
325 submitted through the vertical team for approval by the relevant
326 functional area Chief or their designee. More information about
327 CISA can be found in Appendix H of the Implementation Guidelines
328 and in Engineering Regulation 1100-2-8162, Incorporating Sea
329 Level Change in Civil Works Programs.

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Figure 1: Depiction of increased flood elevation and corresponding horizontal extent

334 (1) If the action is considered a critical action, the
335 floodplain determination should include the use of higher
336 vertical flood elevations and expanded horizontal floodplain
337 boundaries. When using one of the approaches in the FFRMS, the
338 higher vertical elevations and expanded horizontal floodplain
339 boundaries for critical actions are determined based on the
340 description provided in the FFRMS. For critical actions that are
341 not subject to the FFRMS, the vertical elevation and horizontal
342 floodplain extent for critical actions will be based on the 0.2-
343 percent-annual-chance flood.

344

345 (2) Though not intended to be used as an explicit design
346 standard, the identified vertical flood elevation and
347 corresponding horizontal extent of the floodplain must be
348 considered when implementing the eight-step decision-making
349 process. For planning and design of projects, this vertical
350 flood elevation and corresponding horizontal extent of the
351 floodplain must be considered when identifying flood risk
352 management measures that may be appropriate and practicable to
353 incorporate into the project.

354

355 (3) If the Corps action is clearly outside of the floodplain
356 determined to be relevant for that action, it can be assumed
357 that the requirements of EO 11988 and EO 13690 have been met
358 unless the action has impacts on that floodplain or directly or
359 indirectly supports development in that floodplain. Where
360 actions are outside of that floodplain but do impact that

361 floodplain, the impacts must be determined and minimized or the
362 natural floodplain functions must be preserved or restored as
363 described in Step 4. When considering whether an action impacts
364 a floodplain, both short- and long-term impacts must be
365 considered. Additionally, the cumulative effects of many
366 individual actions should be considered, where appropriate. The
367 determination that the action is outside the floodplain, along
368 with the assessment of any impacts on the floodplain or support
369 of floodplain development, should be appropriately documented.
370

371 b. Step 2 - If the action is in a floodplain as determined in
372 Step 1, notify the general public in the affected area to
373 explain the proposed action and obtain their views and comments
374 prior to taking the action. The goal is to engage the broadest
375 audience impacted by the proposed action. As part of the public
376 notice, provide an explanation of the vertical flood elevation
377 and corresponding horizontal extent of the floodplain and how
378 the floodplain was determined. The notification and engagement
379 process will be combined with any ongoing public participation
380 processes to the extent possible, such as those outlined in ER
381 1105-2-100 Appendix B and ER 200-2-2. More detail about public
382 participation is provided in Section 13 (Public Participation).
383

384 c. Step 3 - Identify and evaluate practicable alternatives to
385 the action or to locating the action in a floodplain. The
386 initial array of alternatives should include at a minimum:
387 carrying out the proposed action at an alternative site that is
388 either at a less impactful location within the floodplain or at
389 a location outside the floodplain; alternative actions, which
390 include other means that accomplish the same purpose as the
391 proposed action; and no action.
392

393 d. Step 4 - When an action or its alternative must be carried
394 out in the floodplain, identify beneficial and adverse impacts
395 due to the action and any expected gains or losses of natural
396 and beneficial floodplain values. This impact analysis must also
397 be conducted on actions proposed to be located either inside or
398 outside a floodplain that will affect the floodplain or that
399 will induce development in the floodplain.
400

401 e. Step 5 - If an action must be located in the floodplain,
402 identify viable methods to minimize the harm of that action.
403 Minimization includes consideration of risks and actual harm to
404 people, property, and the natural environment including reduced

405 beneficial floodplain values, as well as consideration of risks
406 and actual harm to the project itself. This also includes
407 minimization of harm that may be caused by any induced
408 development when it has been determined that there is no
409 practicable alternative. Where an action must occur in the
410 floodplain, methods to restore or preserve the natural and
411 beneficial functions of the floodplain must be considered as a
412 potential means to minimize harm, consistent with EO 11988's
413 objective to restore and preserve the natural and beneficial
414 values of floodplains. More information on minimization can be
415 found in Section 10.

416
417 f. Step 6 - Having identified the impacts the proposed action
418 would have on the floodplain (Step 4), methods to minimize these
419 impacts, and opportunities to restore and preserve floodplain
420 values (Step 5), the proposed action must now be reevaluated.
421 The reevaluation must also include a provision for comparison of
422 the relative adverse impacts associated with the proposed action
423 located in and out of the floodplain. The re-evaluation of
424 alternatives that occurs in Step 6 should also consider the no-
425 action alternative.

426
427 g. Step 7 - If the final determination is made that no
428 practicable alternative exists to locating the action in a
429 floodplain, then advise the general public in the affected area
430 of the findings. Clearly identify as part of that notification
431 what, if anything, was done to minimize impacts and restore and
432 preserve floodplain values as a result of EO 11988. More detail
433 about this requirement is included in Section 14a.

434
435 h. Step 8 - Recommend the action most responsive to
436 objectives of the proposed action and consistent with the
437 requirements of EO 11988 as well as other laws, Executive
438 Orders, and requirements. The individual responsible for making
439 the recommendation should be identified in program-specific
440 guidance.

441
442 9. Alternative Formulation and Evaluation of Impacts. The
443 determination of impacts called for in Step 4 of the eight-step
444 decision-making process requires an assessment of the likely
445 adverse and beneficial impacts of a Corps action, including the
446 Corps action itself and any induced development likely to occur
447 in the floodplain as a result of the proposed action. The
448 vertical flood elevation and corresponding horizontal extent of

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449 the floodplain are determined based on the type of action and
450 whether the action is critical. The most current and up-to-date
451 procedures and guidance for identifying, assessing, and
452 evaluating impacts should be used (e.g., ER 1105-2-100) to
453 determine impacts in compliance with EO 11988.

454

455 10. Minimize. Whenever there is no practicable alternative to
456 undertaking an action in a floodplain, steps must be taken,
457 where possible, to minimize: 1.) the impact of the action on
458 human safety, health, and welfare and beneficial floodplain
459 values; and 2.) any induced development likely to occur as a
460 result of the action consistent with existing authority. All
461 practical means and measures must be utilized to minimize any
462 adverse impacts likely to occur because of an action in the
463 floodplain.

464

465 11. Restore and Preserve. Restoration and preservation are
466 methods of enhancing or maintaining the natural and beneficial
467 values of floodplains, including environmental values. Means of
468 restoring and preserving natural functions of floodplains will
469 typically be nonstructural or natural and nature-based
470 approaches consistent with existing authorities, such as:

471

472 a. Relocate non-conforming structures and facilities out of
473 the floodplain.

474

475 b. Restore floodplain ecosystems and natural processes.

476

477 c. Use natural and nature-based features that support
478 engineering functions (e.g., floodplain management actions that
479 improve conveyance) and/or provide for the restoration or
480 enhancement of an ecosystem (e.g., notching dikes/break waters,
481 removing structures or facilities to reconnect rivers to
482 floodplains, or incorporating habitat features into structural
483 designs). When using these approaches, ensure that any necessary
484 permitting requirements are addressed.

485

486 d. Use natural features that support engineering functions
487 (e.g., floodplain management actions that improve conveyance).

488

489 12. Real Estate Activities. When property in floodplains is
490 proposed for outgrant or disposal to non-federal public or
491 private parties, the Corps shall reference in the outgrant or
492 conveyance those uses that are restricted under federal, state,

493 and local floodplain regulations and attach other restrictions
494 to uses of the property as may be appropriate. In the event the
495 proposed use is incompatible with good floodplain management,
496 the Corps shall consider withholding such properties from
497 outgrant or conveyance.

498

499 13. Public Participation. The EO requirements for public
500 participation are being accomplished under existing Corps
501 regulations, with some minor exceptions. Public participation
502 processes may be combined in order to meet the requirements of
503 multiple laws, EOs, and Corps policies requiring such
504 activities.

505

506 a. The policies and objectives for public participation
507 contained in Appendix B of ER 1105-2-100 parallel those of the
508 Order. Public participation programs guided thereby will also
509 include early, specific reference to EO 11988 and its
510 objectives.

511

512 b. Corps actions being considered in the floodplain are also
513 required to comply with NEPA. Agency procedures for complying
514 with NEPA public participation requirements are usually adequate
515 for complying with the public participation requirements of EO
516 11988 as well. NEPA documentation must include record of the
517 inclusion of floodplain impacts relevant to EO 11988.
518 Additionally, at least one alternative in the reasonable array
519 of alternatives must occur outside the floodplain where
520 possible.

521

522 14. Public Notification Requirements. When a determination has
523 been made that no practicable alternative to locating an action
524 in the floodplain exists, EO 11988 requires the reporting of
525 this finding. These requirements generally include reporting
526 procedures that are presently being accomplished under existing
527 Corps regulations, with some minor exceptions. The additional
528 information in Section 14a shall be included in existing
529 reporting requirements, as appropriate, for investigation
530 studies, projects in pre-construction engineering and design
531 stages, studies under the Continuing Authorities Program, and
532 activities under the Operations and Maintenance Program.

533

534 a. Section 2(a)(2) of EO 11988 states that if there is no
535 practicable alternative to locating an action in the floodplain,
536 a public notice shall be prepared and circulated to the general

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537 public. The notice shall include the following: 1.) an
538 explanation of why the action must be located in the floodplain;
539 2.) a description of significant facts, including a summary of
540 public comments received, considered in making the determination
541 to locate in the floodplain, including alternative sites and
542 actions considered and any tradeoffs that were made; and 3.) a
543 statement indicating whether the proposal conforms to the FFRMS
544 and applicable State or local floodplain management standards.
545 The public notice issued by the District Commander upon
546 completion of an investigation or its equivalent will serve as
547 the means to satisfy this requirement of the Order. Public
548 notices should provide specific information pertaining to items
549 1, 2, and 3 and be disseminated to the general public in the
550 affected area.

551
552 b. Because Corps actions in the floodplain are subject to
553 NEPA, the documentation that is required as part of the
554 conclusions in decision documents or other reports and required
555 for actions pertaining to operations and maintenance will
556 include, in addition to existing requirements, the items listed
557 in Section 14a. Those actions in the floodplain that do not
558 require NEPA Public Notice, Notice of Intent, or other similar
559 document will also need to provide a public notice of the
560 decision that was made. The public notice shall meet the
561 requirements contained within this section.

562
563 c. Section 2(a)(3) of Executive Order 11988 discusses state
564 notification requirements. OMB Circular A-95 was rescinded by EO
565 12372. Requirements and procedures for coordination with state
566 entities as set forth in ER 1105-2-100 shall be relied upon for
567 compliance with the intent of EO 11988 in this respect. Notices
568 to the state, where applicable, should include the specific
569 information required in Section 14a.

570
571 d. Section 2(b) of Executive Order 11988 requires that
572 requests for new authorizations or appropriations for new
573 construction starts transmitted to the Office of Management and
574 Budget will provide information on whether a proposed action is
575 located in the floodplain. If the action is located in the
576 floodplain, the transmittal will include information on whether
577 the action complies with EO 11988.

578
579 15. Internal Reporting. Internal reporting on compliance
580 efforts will be required. The purpose of this internal reporting

581 will be to gather implementation experience to inform necessary
582 revisions to this EC. Starting six months after issuance of this
583 EC, and continuing every six months thereafter, implementation
584 experiences and lessons learned will be collected, either
585 through webinars, data calls, or other means. More detailed,
586 supplementary guidance as to what information will be collected
587 and how it will be submitted will be provided at a later date.

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589 FOR THE COMMANDER:

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JAMES C. DALTON, P.E.
Director of Civil Works

DRAFT

597 Attachment 1: Glossary

598

599 1. "1-percent-annual-chance flood" is the flood having one
600 chance in 100 of being equaled or exceeded in any one-year
601 period (also known as the 100-year flood or base flood). This is
602 equivalent to the 1 percent flood in the North Atlantic Coast
603 Comprehensive Study (NACCS).

604

605 2. "1-percent-annual-chance floodplain" is the area subject to
606 flooding by the 1-percent-annual-chance flood (also known as the
607 100-year floodplain or base floodplain). This is equivalent to
608 the 1 percent floodplain in the NACCS.

609

610 3. "0.2-percent-annual-chance flood" is the flood that has a
611 0.2-percent chance of being equaled or exceeded in any given
612 year (also known as the 500-year flood).

613

614 4. "0.2-percent-annual-chance floodplain" is the area subject to
615 flooding by the 0.2-percent-annual-chance flood (also known as
616 the 500-year floodplain).

617

618 5. "Action" any of the following federal activities: (1)
619 acquiring, managing, and disposing of federal lands and
620 facilities; (2) providing federally undertaken, financed, or
621 assisted construction and improvements; and (3) conducting
622 federal activities and programs affecting land use, including
623 but not limited to water and related land resources planning,
624 regulating, and licensing activities.

625

626 6. "Base Flood" the flood that has a one percent chance of being
627 equaled or exceeded in any given year (also known as the 1-
628 percent-annual-chance or 100-year flood).

629

630 7. "Base Floodplain" the area subject to flooding by the base
631 flood (also known as the 100-year floodplain).

632

633 8. "Channel" is a natural or artificial watercourse of
634 perceptible extent with a definite bed and banks to confine and
635 conduct continuously or periodically flowing water.

636

637 9. "Climate-informed Science Approach (CISA)" is the elevation
638 and flood hazard area that result from using a climate-informed
639 science approach that uses the best-available, actionable

640 hydrologic and hydraulic data and methods that integrate current
641 and future changes in flooding based on climate science,
642 including inherent risk and uncertainty. This approach will also
643 include an emphasis on whether the action is a critical action
644 as one of the factors to be considered when conducting the
645 analysis.

646

647 10. "Critical Action" is any activity for which even a slight
648 chance of flooding would be too great.

649

650 11. "Direct support" of floodplain development is an action in
651 the floodplain that encourages, allows, serves, or otherwise
652 facilitates additional floodplain development.

653

654 12. "Emergency" Actions during response and recovery to
655 disasters or emergencies, are those actions necessary to provide
656 assistance to save human life, prevent immediate human
657 suffering, and/or mitigate property damage, particularly to
658 critical public facilities.

659 13. "Facility" is defined in the interagency Implementation
660 Guidelines for EO 11988 and EO 13690 as any man-made or man-
661 placed item other than a structure. "Structure" is defined as a
662 walled and roofed building, including a gas or liquid storage
663 tank, that is principally aboveground, as well as a manufactured
664 home. This reflects the definition of "structure" in the NFIP.
665 Based on these definitions, for the purposes of this EC and
666 compliance with EO 11988, facilities can include but are not
667 limited to bridges, roads, and levees. These definitions of
668 "facility" and "structure" are not consistent with Corps-
669 specific definitions used in other Corps programs; however,
670 because the requirements of EO 11988 and this EC apply to both
671 structures and facilities, this distinction may not matter for
672 implementation purposes.

673

674 14. "Federal Flood Risk Management Standard (FFRMS)" is the
675 national flood risk management standard established by Executive
676 Order 13690 to be incorporated into existing processes used to
677 implement Executive Order 11988.

678

679 15. "FFRMS Floodplain" is the area subject to flooding as
680 determined by one of the following approaches:

681

682 a. Climate-informed Science Approach (CISA) - The elevation
683 and flood hazard area that result from using a climate-informed

9 Dec 16

684 science approach that uses the best-available, actionable
685 hydrologic and hydraulic data and methods that integrate current
686 and future changes in flooding based on climate science. This
687 approach will also include an emphasis on whether the action is
688 a critical action as one of the factors to be considered when
689 conducting the analysis.

690

691 b. Freeboard Value Approach (FVA) - The elevation and flood
692 hazard area that result from using the freeboard value, reached
693 by adding an additional 2 feet to the base flood elevation for
694 non-critical actions and from adding an additional 3 feet to the
695 base flood elevation for critical actions.

696

697 c. 0.2-percent-annual-chance Flood Approach (0.2PFA) - The
698 elevation and flood hazard area that result from using the 0.2-
699 percent-annual-chance flood.

700

701 d. The elevation and flood hazard area that results from
702 using any other method identified in an update to the FFRMS.

703

704

705 16. "Floodplain" is the lowland and relatively flat areas
706 adjoining inland and coastal waters including flood prone areas
707 of offshore islands. For the purposes of EO 11988, the
708 floodplain will be established based on the type of action and
709 whether the action is a critical action.

710

711 17. "Freeboard" is a factor of safety usually expressed in feet
712 above a flood level for purposes of floodplain management. It
713 tends to compensate for the many unknown factors that could
714 contribute to flood heights greater than the height calculated
715 for a selected size flood and floodway conditions, such as wave
716 action, bridge openings, and the hydrological effect of
717 urbanization of the watershed.

718

719 18. "Minimize" is to reduce to the smallest possible amount or
720 degree. While minimization means to reduce to the smallest
721 amount or degree, there is an implicit acceptance of practical
722 limitations. Agencies are required to use all practicable means
723 and measures to minimize harm. EO 11988 does not expect agencies
724 to employ unworkable means to meet this goal.

725

726 19. "National security" is a collective term that encompasses
727 both national defense and foreign relations of the United

728 States. Specifically, national security is a condition that is
729 provided by either: (a) a military or defense advantage over any
730 foreign nation or group of nations; (b) a favorable foreign
731 relations position; or (c) a defense posture capable of
732 successfully resisting hostile or destructive action from within
733 or without, overt or covert.

734

735 20. "Natural and Beneficial Values" are features or resources
736 that provide environmental and societal benefits. These values
737 include, but are not limited to, storing and conveying
738 floodwaters, maintaining water quality, providing habitats and
739 enhancing biodiversity, creating rich soils for agriculture, and
740 providing open space for recreation and environmental education.
741 (Note that water and biological resources are often referred to
742 as "natural functions of floodplains.")

743

744 21. "Natural processes and systems" are the physical, chemical,
745 and biological processes that combine to produce the ecosystem
746 processes (e.g., sediment erosion, transport and deposition) and
747 structures (e.g., habitats and features) that occur in nature.
748 Natural processes and systems can be used alone or in
749 combination with structural and nonstructural measures to
750 support flood risk management.

751

752 22. "Nature-based approaches or features" are created through
753 human design and construction to provide functions and services
754 produced by natural systems. Nature-based approaches for water
755 resources development challenges include both engineered
756 solutions and the use of existing and restored ecosystem
757 processes to provide a range of benefits including flood risk
758 management, ecosystem services, and societal benefits. Though
759 nature-based approaches benefit from natural and ecosystem
760 processes, they generally require additional maintenance to
761 continue to reliably provide their intended levels of service.

762

763 23. "Practicable" means capable of being done within existing
764 constraints. What is practicable will be context specific and
765 include consideration of the pertinent factors, such as
766 environment, statutory authority, legality, cost, technology,
767 and engineering. A "practicable" alternative in the context of
768 EO 11988 varies and, depending on each action, could include
769 carrying out the proposed action outside of the floodplain,
770 accomplishing the same objective using other means, or taking no
771 action at all. If there are no practicable sites outside the

772 floodplain, there can be alternative sites within the floodplain
773 that may need to be evaluated.

774

775 24. "Preserve" is to prevent modification to the natural
776 floodplain environment or to maintain it as closely as possible
777 to its natural state.

778

779 25. "Public Participation" describes the engagement of all
780 entities and people outside the Corps. The term public includes
781 the general public, invested stakeholders, and anyone else who
782 may be impacted by the decision to be made.

783

784 26. "Restore" is to reestablish a setting or environment in
785 which the natural functions of the floodplain can again operate.

786

787

788 27. "Structure" is a walled and roofed building, including a gas
789 or liquid storage tank, that is principally aboveground, as well
790 as a manufactured home (as defined by the NFIP). Any man-made or
791 man-placed item other than a structure is considered a
792 "facility" for the purposes of EO 11988 and this EC. These
793 definitions of "facility" and "structure" are not consistent
794 with Corps-specific definitions used in other Corps programs;
795 however, because the requirements of EO 11988 and this EC
796 generally apply to both structures and facilities, this
797 distinction may not matter for implementation purposes.

798

799