



**U.S. Department of Transportation
Pipeline and Hazardous Materials Safety
Administration**

Pipeline Safety: Plastic Pipe

Draft Environmental Assessment

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**Prepared for:
Office of Pipeline Safety
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LIST OF ACRONYMS

ASTM	American Society for Testing and Materials
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
DOT	United States Department of Transportation
EA	Environmental Assessment
EIS	Environmental Impact Statement
FONSI	Finding of No Significant Impact
IBR	Incorporation by Reference
NEPA	National Environmental Policy Act of 1969
PA	Polyamide
PE	Polyethylene
PHMSA	Pipeline and Hazardous Materials Safety Administration
PSIG	Pounds per Square Inch Gauge
PVC	Polyvinyl Chloride
The Act	Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011
The proposed rule	Pipeline Safety: Plastic Pipeline

1 **1.0 SCOPE OF ANALYSIS**

2 This draft Environmental Assessment (EA) analyzes the potential environmental
3 consequences associated with adopting the Pipeline & Hazardous Materials Safety
4 Administration’s (PHMSA’s), proposed rule “*Pipeline Safety: Plastic Pipe*” (the
5 proposed rule or rule). The rule proposes new provisions to the Federal Pipeline Safety
6 Regulations, 49 Code of Federal Regulations (CFR) Part 192. These new provisions
7 include:

- 8
- 9 • Tracking and Traceability
 - 10 • Design Factor for Polyethylene (PE) Pipe
 - 11 • Expanded use of PA-11 Pipe
 - 12 • Incorporation of PA-12 Pipe
 - 13 • Risers
 - 14 • Fittings
 - 15 • Plastic Pipe Installation
 - 16 • Repairs
 - 17 • General Provisions
- 18

19 **2.0 PURPOSE OF AND NEED FOR ACTION**

20 **2.1 INTRODUCTION**

21 This draft EA is prepared in accordance with the National Environmental Policy Act of
22 1969 (NEPA)¹, as amended, and the Council on Environmental Quality regulations for
23 implementing NEPA (40 CFR 1500-1508). This statute and the implementing
24 regulations require that PHMSA assess the environmental impacts of any Proposed
25 Federal Action; identify adverse environmental effects that cannot be avoided should the
26 Proposed Action be implemented; and evaluate alternatives to the Proposed Action,
27 including a No Action Alternative, and their environmental effects. This EA evaluates

¹ 42 U.S.C 4321 *et seq.*
May 1, 2015

28 the potential effects of the Proposed Action and the No Action Alternative on the
29 environment.

30

31 If it is determined that no significant impacts would occur as a result of the Proposed
32 Action, then the determination would result in a Finding of No Significant Impact
33 (FONSI). PHMSA would then publish a Final EA and the FONSI, completing the NEPA
34 process.

35

36 **2.2 BACKGROUND**

37 Under the Federal Pipeline Safety Laws, 49 U.S.C. 60101 *et seq.*, the Secretary of
38 Transportation must prescribe minimum safety standards for pipeline transportation and
39 for pipeline facilities. The Secretary has delegated this authority to the PHMSA
40 Administrator (49 CFR 1.53(a)) and the Federal Pipeline Safety Regulations can be found
41 at 49 CFR 190-199. PHMSA, pipeline operators, and others have identified certain
42 errors, inconsistencies and deficiencies in the regulations. The proposed changes would
43 also address safety recommendations made by the National Transportation Safety Board
44 (NTSB) and petitions for rulemaking received by PHMSA that are relevant to the Federal
45 Pipeline Safety Regulations.

46 **2.3 PURPOSE AND NEED**

47 PHMSA's mission is to protect people and the environment from the risks of hazardous
48 materials transportation. The purpose of the proposed rulemaking change is to enhance
49 pipeline safety, lessen the frequency and societal consequences of pipeline incidents,
50 environmental degradation, personal injury, and loss of life. PHMSA's overall mandate
51 to regulate pipeline safety is set by federal law under 49 USC 60102 *et seq.* with the
52 mission of protecting people and the environment from the risks of hazardous materials
53 transportation. Specifically, this rulemaking action would update regulations to coincide
54 with new products and standards that have been added to the industry over the years.
55 This would provide operators flexibility to utilize these materials while ensuring safety
56 through data collection, maintenance and regulatory oversight.

57

58 These changes are needed based on issues that PHMSA and the States have observed
59 during inspections along with petitions and recommendations from industry groups.
60 Specifically, it has been noted that during accident investigations additional information
61 is needed regarding the source of pipe material and components that have already been

62 installed. It has also been noted during inspections that risers are lacking design
63 requirements, leading to pipeline failures, further supporting the need for this change. In
64 addition, recent research by the Gas Technology Institute (GTI) provides justification for
65 the inclusion of a material not currently included in the regulations.
66

67 **3.0 PROPOSED ACTION AND ALTERNATIVES**

68 **3.1 OVERVIEW OF ALTERNATIVES**

69 PHMSA considered two alternatives to the proposed rule: the No Action Alternative and
70 the Proposed Action, which is a set of revisions to the Federal Pipeline Safety
71 Regulations to incorporate proposed amendments and minor editorial changes. This EA
72 examines the environmental impacts of the alternatives, the No Action Alternative, which
73 is required by NEPA, and the Proposed Action.
74

75 Under the No Action Alternative, PHMSA would not incorporate proposed amendments
76 and changes to revise the Federal Pipeline Safety Regulations. The CEQ (Council on
77 Environmental Quality) regulations for implementing NEPA require the analysis of a No
78 Action Alternative. The No Action Alternative is commonly used to define existing
79 conditions of the natural and human environment, and as a baseline for analyzing
80 environmental impacts of the Proposed Action.
81

82 Under the Proposed Action, PHMSA would make certain amendments, corrections, and
83 editorial changes to the Federal Pipeline Safety Regulations to address issues that
84 PHMSA and the States have observed.
85

86 **3.2 NO ACTION ALTERNATIVE**

87 Under this alternative, PHMSA would not amend, correct or update the Federal Pipeline
88 Safety Regulations. Pipeline operators would continue to be governed by the
89 requirement of the existing Federal Pipeline Safety Regulations but would not be subject
90 to the new requirements of the Act. This alternative would not result in impacts to the
91 affected environment or result in any environmental consequences.

92 **3.3 PROPOSED ACTION**

93 PHMSA’s Proposed Action is a set of amendments and editorial changes to the Federal
94 Pipeline Safety Regulations (49 CFR 192 which are summarized in the sections below. A
95 more detailed description of these changes can be found in the Notice of Proposed
96 Rulemaking (NPRM 2014).

97 **3.3.1 Tracking and Traceability**

98 PHMSA has found that operators are often lacking information to identify potential
99 systemic issues related to incidents involving plastic pipe and components. Currently, it is
100 often difficult to determine whether pipe or fitting failures are related to a certain type of
101 material, vintage of material, specific product defect or design, heat/lot of the product, or
102 produced by a certain manufacturer at a certain time. Once a pattern of failure is
103 identified, many operators cannot locate items of concern within their systems due to
104 limited available data. This can lead to the inability to promptly locate and remove
105 affected pipe or fittings.
106

107 **3.3.2 Today’s current regulations under § 192.1007, require distribution**
108 **operators to main capture and retain data on newly installed pipelines.**
109 **In an effort to clarify the intent of these provisions, PHMSA is proposing**
110 **to revise the regulations in 49 CFR 192.3 to define tracking information**
111 **and traceability information. Further, PHMSA is proposing to revise**
112 **the marking requirements in § 192.63 to specify that pipe and**
113 **components contain certain markings that contain traceability**
114 **information. PHMSA is also proposing to specify that tracking**
115 **information and traceability information for new and replaced pipe**
116 **needs to be kept for the life of the pipeline. Design Factor for**
117 **Polyethylene Pipe**

118 Currently, certain requirements limit the use of Polyethylene (PE) pipe based on design
119 specifications. This change responds to petitions to increase the maximum allowable
120 design factor for PE pipe in § 192.121 from 0.32 to 0.4, allowing for the production and
121 installation of PE pipe with thinner walls and/or a higher design pressure. The safety
122 justification for this change is based on research and technical analysis performed by the
123 GTI. In addition, the proposed changes would include certain additional limitations by

124 type of material and wall thickness if the higher design factor is to be utilized by an
125 operator.

126 **3.3.3 Expanded use of PA-11 Pipe**

127 This change would expand the use of Polyamide-11 (PA-11) which is currently allowed
128 with certain limitations on maximum design pressure, diameter (up to 4”), and standard
129 dimension ratio. Considerations for these changes are based on the use of PA-11 at
130 operating pressures greater than 100 psig since 1999 on projects under special permit or
131 State waivers, evaluation through projects at non-jurisdictional locations (such as on an
132 operator’s or researcher’s private property), installations of PA-11 up to and including
133 200 psig since a 2008 Final Rule allowed the use of PA-11 up to 200 psig, improved
134 material properties that have been evaluated through testing to help validate the material
135 meets strength and durability requirements at a higher pressure rating, and newer
136 American Society for Testing and Materials (ASTM) standards related to PA-11. Based
137 on these safety considerations the proposed change would expand the current regulation
138 to allow up to 6” diameter PA-11 pipe with a maximum design pressure of 250 psig.

139 **3.3.4 Incorporation of PA-12 Pipe**

140 This change would allow the use of Polyamide-12 (PA-12) which is currently not
141 allowed. PHMSA has been petitioned by PA-12 pipe manufacturers to allow the use of
142 this material using a 0.4 design factor with certain limitations for design pressure of
143 (maximum of 250 pounds per square inch gauge psig) and wall thickness (at least 0.090
144 inches). Testing results for PA-12 pipe has validated the material meets strength and
145 durability requirements. In addition, this material has been granted for use in several
146 State waivers. This proposed rulemaking change would allow for the use of PA-12 pipe.

147 **3.3.5 Risers**

148 A pipeline riser is in general a vertical pipe that connects buried pipe to an above ground
149 device such as a meter. Current regulations do not contain specific requirements for risers
150 regarding design, installation, and support considerations. This includes risers used for
151 service lines as well as those for other installations near small regulator stations and farm
152 taps.

153

154 This proposed rulemaking action would amend 49 CFR Part 192 to include new detailed
155 design and construction requirements for risers associated with plastic pipe. The specific
156 construction requirements in this proposal include: removal of burrs on metal
157 components prior to insertion of plastic pipe, manufacture and assembly of riser at a
158 manufacturing site (i.e., no field assembly), and compliance with design requirements in
159 § 192.204 (new section on riser design requirements). Including such requirements in the
160 regulations is intended to improve overall pipeline safety by addressing gaps in the
161 regulations and codifying best practices.

162 **3.3.6 Fittings**

163 PHMSA has identified issues with certain mechanical fittings where pipe can pull out
164 from the mechanical fittings. To prevent incidents related to this type of failure, PHMSA
165 is proposing that all fittings used in plastic pipeline service be designed and tested to
166 provide a seal plus resistance to pull-out, so that a force on the connection would cause
167 the pipe being joined to yield before the joint does. More specifically, this change would
168 require fittings provide a Category 1 joint under the ASTM standard D2513.

169

170 In light of the proposed revisions of the PA11 and PE regulations, and the introduction of
171 PA12, PHMSA proposes to also consider recently developed standards for incorporation
172 by reference (IBR) that further enhance pipeline safety in order to address potential safety
173 risks. Specifically, this rule making action would incorporate by reference into Section
174 192.7 several ASTM standards for fittings related to PE, PA11, and PA12 pipe and would
175 update references to other standards.

176

177 *F1 Incorporation by Reference (Section 192.7)*

178

179 Incorporate by reference into Section 192.7 several ASTM standards for fittings related
180 to PE, PA11, and PA12 pipe and update references to other standards. The specific
181 standards to be incorporated and updated are listed in Section F.1 of the NPRM.

182

183 *F2 External Corrosion Control for Buried/Submerged Pipelines Installed after* 184 *1971(Section 192.455)*

185

186 Currently section 192.455 requires pipelines buried or submerged after 1971 to have
187 external protective coatings that meet § 192.461. In addition, this section requires a
188 cathodic protection system be in operation within 1 year after completion of construction.

189 This change would clarify this requirement that these fittings be cathodically protected
190 and monitored in accordance with § 192.465(a).

191 **3.3.7 Plastic Pipe Installation**

192 PHMSA is proposing the following additions to the plastic pipe installation requirements:

193

194 *G1 Installation by Trenchless Excavation (Sections 192.3, 192.329 and 192.376)*

195

196 Current regulations do not contain detailed requirements for the installation of plastic
197 pipe by trenchless excavation. PHMSA proposed the addition of a new section to detail
198 basic guidelines for trenchless excavation in an effort to implement a consistent approach
199 to this methodology of installation and in consideration of industry best practices in use
200 today. In addition this section would include a new definition for the term “weak link.”

201

202 *G2 Joining Plastic Pipe (Section 192.281)*

203

204 In an effort to reduce confusion and promote safety, PHMSA is proposing several
205 revisions to § 192.281. This change would clarify solvent cement requirements only
206 apply to Polyvinyl Chloride (PVC) Pipe. In addition this would clarify that the joining
207 requirements for heat-fusion joints apply to both the pipe and/or the component that may
208 be connected to the pipe. Lastly, this change would require each mechanical fitting to
209 meet a listed specification.

210

211 *G3 Qualifying Joining Procedures (Section 192.283)*

212 Section 192.283 details the requirements for qualifying joining procedures in relation to
213 plastic pipe. PHMSA proposes to revise this section to clarify that the joining procedures
214 apply to both the pipe and or the component that may be connected to the pipe. PHMSA
215 also proposes to remove the current § 192.283(d) which allows for use of pipe or fittings
216 manufactured before July 1, 1980 if joined in accordance with procedures that the
217 manufacturer certifies would produce a joint as strong as the pipe. A number of
218 advancements have been made in standards related to pipe and fittings since 1980,
219 therefore the use of newer materials manufactured in accordance with newer standards
220 should be encouraged. As with other aspects of this proposed rule, the requirements
221 would only apply to pipe and fittings that are newly installed, repaired, or replaced after
222 the effective date of the rule. This does not preclude the continued use of pipe or fittings
223 manufactured prior to July 1, 1980 that may already be installed prior to the effective date
224 of the rule.

225

226 *G4 Qualifying Persons to Make Joints (Section 192.285)*

227 PHMSA is proposing several revisions to § 192.285. This change would remove the
228 testing details in this section and reference ASTM F 2620-12. This would also add a
229 requirement for an operator to maintain a record detailing location of each joint and
230 identify the person who made the joint.

231

232 *G5 Bends (Section 192.313)*

233 Section 192.313 details requirements for bends and elbows primarily for steel pipe.
234 PHMSA proposes to revise this section to specify that installed plastic pipe may not
235 contain bends that exceed the maximum radius specified by the manufacturer for the
236 particular diameter of the pipe.

237

238 *G6 Installation of Plastic Pipe*

239 Section 192.321 details requirements for plastic pipe installation for gas distribution
240 mains and transmission pipelines. PHMSA proposes to require all plastic pipe to have a
241 minimum wall thickness of 0.090 inch, specify that the plastic pipe be protected from
242 damage at both the entrance and exit of any casings during the installation process,
243 require operators to comply with a listed specification and ensure that pipe and/or
244 components do not see direct ultraviolet rays for periods greater than specified in the
245 standard, revise paragraph (h)(3) to replace the reference § 192.123 with § 192.121, add
246 provisions that require backfill material to not contain materials that would be detrimental
247 to the pipe, such as rocks of a size exceeding those established through sound engineering
248 practices; and the ground be properly compacted underneath, along the sides, and for
249 predetermined distances above the pipe, and to allow for the above-ground level
250 termination of plastic mains under certain conditions.

251

252 *G7 Service Lines; General Requirements Connections to Main Piping (Section*
253 *192.367)*

254 Section 192.367(b) specifies requirements for compression-type connections to a main.
255 PHMSA proposes to add a new paragraph, (b)(3), to require mechanical connections on
256 plastic pipe to provide a seal plus resistance to pull-out (Category 1 fitting) to a force on
257 the pipe end equal to or greater than that which would cause permanent deformation of
258 the pipe.

259

260 *G8 Equipment Maintenance; Plastic Pipe Joining (Section 192.756)*

261 Current regulations do not contain detailed provisions for maintaining equipment used in
262 joining plastic pipe. PHMSA proposes to add a new section (§ 192.756) to include such

263 requirements. These provisions would require each operator to maintain the equipment,
264 including measuring devices for joining plastic pipe in accordance with the
265 manufacturers' recommended practices or alternative procedures that have been proven
266 by testing and experience. Operators would also be required to calibrate and test such
267 equipment and devices in addition to maintaining records that substantiate these
268 calibrations and tests.

269 **3.3.8 Repairs**

270 Currently, § 192.311 specifies that each imperfection or damage impairing serviceability
271 of plastic pipe must be repaired or removed. In addition, some operators currently utilize
272 stainless steel band clamps as permanent repairs on plastic pipe .
273

274 The proposed change would clarify existing regulations and include a requirement in
275 § 192.311 that all pipe or components be replaced if they have a scratch or gouge
276 exceeding 10% of the wall thickness. In addition, this change would require that stainless
277 steel leak-repair clamps be used only as temporary repairs, rather than as permanent fixes
278 . Therefore, PHMSA proposes the incorporation of a new section (§ 192.720) to prohibit
279 the use of leak-repair clamps as a means for permanent repair on plastic gas pipe used in
280 distribution service.

281 **3.3.9 General Provisions**

282 The proposed rulemaking would also include the following general provisions for plastic
283 pipe:

284 *11 Plastic Pipe Material*

285 Currently, § 192.59(a)(1) requires new plastic pipe to be manufactured in accordance
286 with a listed specification. PHMSA proposes to require the plastic pipe be free from
287 visual defects and contain no regrind or rework material.
288

289 *12 Plastic Pipe Storage and Handling*

290 Current regulations do not address the storage and handling of plastic pipe; therefore,
291 PHMSA proposes a new section (§ 192.67), to address the storage and handling of plastic
292 pipe. This new section would require operators have written procedures for storage and
293 handling of plastic pipe that meets a listed specification.
294

295 *13 Gathering Lines*

296 Section 192.9 currently details the requirements applicable to gathering lines. In
297 particular, § 192.9(d) specifies the requirements for Type B regulated onshore gathering
298 lines. For clarification purposes, PHMSA proposes to add a new paragraph (d)(7) to
299 specify that such plastic pipelines must comply with requirements of Part 192 applicable
300 to plastic pipe.

301

302 *14 Merge Sections 192.121 and 192.123*

303 Currently, § 192.121 specifies the calculations for determining the design pressure for
304 plastic pipe while § 192.123 specifies the design limitations for plastic pipe. In an effort
305 to make the pipeline safety regulations more efficient, PHMSA proposes to merge the
306 § 192.123 design limitations into § 192.121. PHMSA also proposes to increase the
307 design factor for certain PE pipe produced after (insert effective date), increase the design
308 pressure and outer diameter limitations of PA-11 produced after (insert effective date),
309 and add the use of PA-12 plastic pipe.

310

311 *15 General Design Requirements for Components (Section 192.143)*

312 Section 192.143 contains general design provisions for pipeline components. For
313 clarification purposes, PHMSA is proposing the addition of a new paragraph (c) to
314 specify that components used for plastic pipe must be able to withstand operating
315 pressures and anticipated loads in accordance with a listed specification.

316

317 *16 General Design Requirements for Valves (Section 192.145)*

318 Section 192.145 contains general design provisions for pipeline valves. For clarification
319 purposes, PHMSA is proposing the addition of a new paragraph (f) to specify that plastic
320 valves meet a listed specification.

321

322 *17 General Design Requirements for Standard Fittings (Section 192.149)*

323 Section 192.149 contains general design provisions for pipeline fittings. For clarification
324 purposes, PHMSA is proposing the addition of a new paragraph (c) to specify that plastic
325 fittings may only be used if they meet a listed specification.

326

327

328 **4.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL**
329 **CONSEQUENCES**

330 **4.1 AFFECTED ENVIRONMENT**

331 The gas pipeline infrastructure in the United States is a network of over 2.6 million miles
332 of pipelines ([http://opsweb.phmsa.dot.gov/pipelineforum/facts-and-stats/incidents-and-](http://opsweb.phmsa.dot.gov/pipelineforum/facts-and-stats/incidents-and-mileage-report/)
333 [mileage-report/](http://opsweb.phmsa.dot.gov/pipelineforum/facts-and-stats/incidents-and-mileage-report/)). These pipelines exist in a variety of diverse environments, including
334 offshore locations, highly populated urban sites, and unpopulated rural areas. Therefore,
335 the potentially affected environment would be the land area and waterways in the United
336 States where pipelines are located.
337

338 **4.2 ENVIRONMENTAL CONSEQUENCES OF THE ALTERNATIVES**

339 This section identifies the environmental effects of each alternative. These effects include
340 impacts to human health and the physical environment. The physical environment
341 includes:

- 342 • Air quality and climate
- 343 • Soils, topography and geology
- 344 • Water resources (floodplains, wetlands and water bodies)
- 345 • Historical and archeological resources
- 346 • Wildlife
- 347 • Farmland

348 **4.2.1 Proposed Action Alternative**

349 This section identifies the environmental effects of each component of the proposed
350 rulemaking, including potential impacts to human health and to the physical environment,
351 as defined in Section 4.2. Many of the changes included in the proposed rule reflect
352 existing prudent pipeline practices and others propose entirely new practices. Either way,
353 the proposed rule would require these practices.
354

355 Where the proposed rule would impose repairs, tracking and traceability standards that
356 identify conditions in existing pipelines may require preventative maintenance activities
357 that could lead to more excavations. While such excavations would individually have
358 minor localized environmental impacts, they would also decrease the likelihood of

359 pipeline failures that could result in catastrophic damage to human health and the
360 environment. Therefore, it is expected that in such cases, the proposed rule would have a
361 negligible adverse effect on the physical environment and would result in net positive
362 impacts to human health and the physical environment, including air quality and climate,
363 soils, topography, geology, water resources (floodplains, wetlands and water bodies),
364 historical and archeological resources, wildlife, and farmland.

365

366 Where the proposed rule would impose design standards that would avoid the installation
367 of faulty pipeline or components and allow flexibility to use safer technology, the rule
368 would have a beneficial effect on the physical environment by reducing the need for
369 excavation from later failures and by also reducing the impact of such failures on human
370 health and the physical environment.

371

372 To the extent that the proposed rule would affect pipelines that exist in areas where
373 Environmental Justice concerns exist, the regulatory amendments would have the same
374 effect regardless of the geographic location of the pipelines. Therefore, Environmental
375 Justice populations are not expected to be affected by the proposed rule any differently
376 than the general population. Because PHMSA believes that these regulatory amendments
377 would increase pipeline safety across systems, we believe any impact to areas where
378 Environmental Justice concerns exist would be positive. Therefore, consistent with
379 Executive Order 12898 and DOT Order 5610.2(a), PHMSA does not anticipate that the
380 proposed rule would result in disproportionately high and adverse human health or
381 environmental effects on minority or low-income populations.

382

383 In this section, environmental consequences of the Proposed Action Alternative are
384 examined for each component of the proposed rulemaking, which are described in section
385 3.2. This section describes the potential impacts of each component on the environment
386 and public health.

387

388 **Tracking and Traceability:** The proposed revisions would require operators to record
389 and track plastic pipeline component details related to the manufacture and location
390 of the material once it is installed. This change would allow for the identification and
391 location of pipe or material that has been found to have systemic problems. This would
392 ensure proactive mitigation of future problems and would reduce the potential for more
393 widespread pipeline failure. In addition, this would reduce unnecessary excavation by
394 requiring a simplified method for identification and location of installed pipe material.
395 This change may result in maintenance activities that could lead to excavation, which
396 individually has very minor and localized environmental impacts. On the other hand, it

397 could reduce unnecessary excavations. Therefore, it is expected that this component of
398 the proposed rule would have a net positive impact to human health and the environment.

399

400 **Design Factor Polyethylene Pipe:** This change would increase the allowable maximum
401 design factor for certain PE pipe, codifying technical advances, and in turn, expanding
402 the available use of PE pipe. This would provide operators with more flexibility to use
403 newer and safer technologies, reducing the risk of pipeline failure. Therefore, this
404 component of the proposed rule is expected to result in a positive impact to human health
405 and the environment.

406

407 **Expanded use of PA-11 Pipe:** Expanding the use of PA-11 pipe would provide
408 flexibility in choice of material. Allowing the use of newer and potentially safer
409 technology is expected to reduce the likelihood of pipeline failure. Therefore, this
410 component of the proposed rule is expected to reduce the likelihood of pipeline failure,
411 resulting in a positive impact to human health and the environment.

412

413 **Incorporation of PA-12 Pipe:** Allowing the use of PA-12 pipe would provide flexibility
414 in choice of material. Allowing the use of newer and potentially safer technology is
415 expected to reduce the likelihood of pipeline failure. Therefore, it is expected that this
416 component of the proposed rule would reduce the likelihood of pipeline failure, resulting
417 in a positive impact to human health and the environment.

418

419 **Risers:** Requirements related to the design and installation of risers would improve
420 pipeline safety by implementing safety related design requirements for installation and
421 codifying current best practices. Therefore, it is expected that this component of the
422 proposed rule would have a positive impact to human health and the physical
423 environment.

424

425 **Fittings:** These changes would address observed issues related to mechanical fittings
426 becoming loose and pipe pulling out of the fittings which lead to leaks. This change
427 would require a Category 1 joint which would provide additional seal plus resistance
428 aimed at reducing the observed failures related to these fittings and associated leaks.
429 This may result in maintenance and repair activities that could lead to more excavations,
430 which individually have very minor and localized environmental impacts. However, it is
431 expected that this component of the proposed rule would have a net positive impact to
432 human health and the physical environment.

433

434 **Plastic Pipe Installation:** These changes would address various aspects of plastic pipe
435 installation; prevent abrasion and eventual leakage, ensure connections are strong enough
436 to withstand forces exerted on them, and require certain joints to ensure adequate
437 resistance. Providing clear guidance, standardized procedures, and enforceable
438 regulation would improve safety and reduce the potential for pipeline failure. Therefore,
439 these changes are expected to have a positive impact to human health and the physical
440 environment.

441

442 **Repairs:** These requirements are related to maintenance activities, designed to enhance
443 safety by ensuring that plastic pipe is properly maintained and repaired reducing the
444 potential for pipeline failure. This change may result in maintenance activities that could
445 lead to more excavations, which individually have very minor and localized
446 environmental impacts. Implementing these repair requirements are expected to reduce
447 pipeline failure and therefore, have a net benefit to human health and the physical
448 environment.

449

450 **General Provisions:** The proposed general provisions would require certain
451 manufacturing standards and general design requirements. These changes would provide
452 clear guidance and standardize procedures and enforceable regulations, in turn improving
453 safety and reducing the potential for pipeline failure. Therefore, these changes are
454 expected to have a positive impact to human health and the physical environment.

455 **4.2.2 Summary of Environmental Consequences of the Proposed Action**

456 The proposed Action Alternative is not expected to result in adverse environmental
457 impacts and is expected to have a positive impact to human health and the environment.
458 Some elements of the proposed rulemaking would require maintenance activities that
459 may involve excavations. Such excavations would individually have minor localized
460 environmental impacts and would also decrease the likelihood of pipeline failures that
461 could result in catastrophic damage to human health and the environment. Other
462 components of the proposed rule would reduce the potential for pipeline failure through
463 regulations that would address the design and installation of risers, plastic pipe
464 installation, and issues with fittings. These changes would decrease the likelihood of
465 pipeline failures that could result in catastrophic damage to human health and the
466 environment.

467

468 In summary, the proposed rule would have a net positive impact to human health and the
469 physical environment through a reduction in pipeline failures and increased safety to
470 pipeline workers and the public.

471 **4.2.3 No Action Alternative**

472 There are not expected to be any environmental impacts to human health, the physical
473 environment or environmental justice from the no action alternative, in which no
474 regulatory changes would occur. However, if the no action alternative were selected, the
475 changes aimed at further reducing pipeline failure would not be implemented or
476 achieved. Therefore, PHMSA believes that the no action alternative would be an inferior
477 choice for environmental and human safety protection.

478
479 **5.0 DECISION REGARDING THE DEGREE OF ENVIRONMENTAL**
480 **IMPACT**

481 PHMSA has preliminarily determined that the selected alternative would not have a
482 significant negative impact on the environment. In fact, PHMSA believes the proposed
483 rule would have a positive impact on the environment. PHMSA welcomes comment on
484 any of these conclusions.

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486 **6.0 LIST OF PREPARERS AND REVIEWERS**

487 **6.1 PREPARERS**

488 This EA was prepared by the following DOT staff from PHMSA and Volpe National
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495 **6.2 REFERENCES**

496 U.S. Department of Transportation, Pipeline and Hazardous Materials Safety
497 Administration. Pipeline Safety: Plastic Pipe Rule, Notice of Proposed Rulemaking,
498 Docket No. PHMSA - 2011-0026 (May 1, 2014).

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