

# STORMWATER MANAGEMENT AT NIST-BOULDER

NIST S 7301.11

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## 1. PURPOSE

The purpose of this suborder is to establish the requirements and associated roles and responsibilities regarding the discharge of stormwater, and to outline the program elements to ensure compliance with regulatory and permit requirements and applicable policies at NIST Boulder.

## 2. BACKGROUND

- a. The Department of Commerce (DoC) Boulder Labs encompasses 206 acres and includes over 25 buildings, 2.3 miles of roads, and 9.8 acres of parking lots. Approximately 140 acres is set aside as open space and is used by DoC Boulder Labs personnel and the public.

Impervious surfaces at the DoC Boulder Labs (roofs, pavement) prevent rain, snow, and sleet from infiltrating naturally into the soil. Stormwater runoff is routed and conveyed away from these impervious surfaces by storm drains and storm sewers and released to the City of Boulder Storm Sewer System and nearby streams. As stormwater flows to its collection and release points it picks up pollutants including litter, oil, gasoline, anti-freeze, landscape debris, fertilizers, herbicides, pesticides and sediments. Large amounts of impervious surface also increase the amount of stormwater runoff, which during large rain events can degrade the quality of the streams that receive the runoff. Stormwater management practices are intended to reduce the quantity and improve the quality of stormwater runoff.

- (1) The U.S. Environmental Protection Agency (EPA) issued the DoC Boulder Labs, including NIST, a permit to discharge stormwater, regulating its discharges into the site's stormwater management system with a primary emphasis on pollution prevention and erosion control. The permit designates the DoC Boulder Labs as a Small Municipal Separate Storm Sewer System, also known as an MS4 Permit.

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<sup>1</sup> The revision history for this document can be found in Appendix A.

37 (2) This document outlines the requirements of the MS4 Permit and the portions of the  
38 overall DoC Boulder Labs Stormwater Management Program applicable to NIST  
39 Boulder. The MS4 permit requires that the DoC Boulder Labs produce and maintain a  
40 stormwater management plan (SWMP), identifying permit requirements, the process for  
41 meeting those requirements and the party responsible for each action.

42  
43 b. NIST P 7300.00 articulates NIST’s commitment to making environmental management,  
44 including management of stormwater in compliance with applicable regulations and permits,  
45 an integral core value and vital part of the NIST culture by, in part:

46  
47 (1) Complying with applicable laws, regulations, and other promulgated safety and health  
48 requirements; and

49  
50 (2) Abating deficiencies and taking actions to prevent incidents from occurring.

51  
52 c. The DoC Boulder Laboratories must meet the requirements of the following:

53  
54 (1) 40 CFR Parts 100-149; and

55  
56 (2) 5 CCR 1002-38.

57  
58

59 **3. APPLICABILITY**

60 This suborder applies to all activities at the NIST-Boulder site that may impact stormwater.

61  
62 **Note:** Under the cross-service agreement, personnel employed by or contracted by other  
63 agencies at the DoC Boulder Laboratories are required to comply with the requirements  
64 of the DoC Boulder Labs SWMP, Municipal Separate Storm Sewer System Permit,  
65 applicable state and federal regulations and the cross services agreement.

66  
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68 **4. REFERENCES**

69 Legal and other requirements common to all NIST Environmental Suborders can be found in  
70 Section 4 of NIST O 7301.00. The legal and other requirements specific to this suborder are  
71 as follows:

72  
73 a. 5 CCR 1002-38, [\*Classifications and Numeric Standards for South Platte River Basin,  
74 Laramie River Basin, Republican River Basin, Smoky Hill River Basin\*](#)

75  
76 b. 40 CFR 100-149, [\*Water Programs\*](#)

- 77 c. MS4 Permit No. COR042004, [\*Authorization to Discharge Under the National Pollutant\*](#)  
78 [\*Discharge Elimination System\*](#), effective 1 January 2024
- 79
- 80 d. [\*DoC Boulder Labs Stormwater Management Plan \(SWMP\)\*](#)
- 81
- 82 e. COR10F000, [\*EPA Construction General Permit 2022 Revisions\*](#)
- 83
- 84 f. Public Law 110-140, [\*Energy Independence and Security Act, Section 438\*](#)
- 85
- 86 g. [\*USEPA Technical Guidance on Implementing the Stormwater Runoff Requirements for\*](#)  
87 [\*Federal Projects under Section 438 of the Energy Independence and Security Act \(EPA841-\*](#)  
88 [\*B-09-001\)\*](#)
- 89
- 90 h. [\*Mile High Flood District Urban Storm Drainage Criteria Manual.\*](#)
- 91
- 92 i. [\*Department of Commerce, Department Administrative Order \(DAO\) 202-751, Discipline\*](#)
- 93
- 94 j. [\*Federal Acquisitions Regulations \(FAR\), Subpart 49.4, Termination for Default\*](#)
- 95

## 97 5. APPLICABLE NIST SUBORDERS

98 Other NIST Environmental Suborders applicable to work covered by this suborder include  
99 the following:

- 100
- 101 a. NIST P 7300.00: [\*Environmental Management\*](#)
- 102
- 103 b. NIST S 7301.01: [\*Environmental Management System\*](#)
- 104
- 105 c. NIST S 7301.07: [\*Chemical Waste Accumulation and Disposal at NIST Boulder\*](#)
- 106
- 107 d. NIST S 7301.09: [\*Oil Storage and Handling at NIST Boulder\*](#)
- 108
- 109 e. NIST S 7301.13: [\*Wastewater Management at NIST Boulder\*](#)
- 110

## 112 6. REQUIREMENTS

- 113 a. General Requirements and Limitations on Coverage
- 114

115 (1) Duty to Comply - NIST shall develop a stormwater management program designed to  
116 reduce the discharge of pollutants to the maximum extent practicable. This shall be

117 accomplished through the implementation of the terms of the MS4 permit described in  
118 Section 6.b below.

119  
120 (2) Duty to Mitigate – NIST shall take all reasonable steps to minimize or prevent any  
121 discharge that has a reasonable likelihood of adversely affecting human health or the  
122 environment. Implementation of these control measures is addressed in the DoC Boulder  
123 Labs SWMP.

124  
125 (3) Signature of Authorized Administrator – All required reports, notifications and other  
126 information submitted to EPA shall be signed by a duly authorized employee. These  
127 employees include:

128  
129 (a) BSHED Chief (MS4 Permit application, annual report, responses to regulatory  
130 agencies);

131  
132 (b) NIST Boulder Operations Director (MS4 Permit application, annual report, responses  
133 to regulatory agencies, stormwater management plan);

134  
135 (c) NIST Boulder Laboratory Director (MS4 Permit application, annual report, responses  
136 to regulatory agencies, stormwater management plan);

137  
138 (d) NIST Chief Safety Officer (MS4 Permit application, annual report, responses to  
139 regulatory agencies, stormwater management plan); and

140  
141 (e) NIST Chief Facilities Management Officer (construction permits for projects covered  
142 under the EPA Construction General Permit).

143  
144 (4) Authorized Discharges – The discharges below are allowed under the MS4 permit, when  
145 properly managed to minimize pollutants introduced into stormwater:

146  
147 (a) Stormwater, including precipitation runoff and snow melt;

148  
149 (b) The following discharges from operation and maintenance activities:

- 150  
151 i. Water line flushing;  
152 ii. Landscape irrigation;  
153 iii. Diverted stream flows;  
154 iv. Rising ground waters;  
155 v. Uncontaminated ground water infiltration;  
156 vi. Uncontaminated pumped ground water;

- 157           vii.    Discharges from potable water sources;
- 158           viii.   Foundation drains;
- 159           ix.     Air conditioning condensate;
- 160           x.     Irrigation water;
- 161           xi.     Springs;
- 162           xii.    Water from crawl space pumps;
- 163           xiii.   Footing drains;
- 164           xiv.    Lawn watering;
- 165           xv.    Flows from riparian habitats and wetlands;
- 166           xvi.    Dechlorinated swimming pool discharges;
- 167           xvii.   Street wash water;
- 168           xviii.   Power washing where no chemicals are used;
- 169           xix.    Roof drains;
- 170           xx.    Fire hydrant flushing;
- 171           xxi.    Emergency discharges required to prevent imminent threat to human
- 172                    health or severe property damage, provided that reasonable and
- 173                    prudent measures have been taken to minimize the impact of such
- 174                    discharges; and
- 175           xxii.   Discharges or flows from firefighting activities occurring during
- 176                    emergency situations.

177  
178           **Note:** Discharges associated with industrial (manufacturing, processing or raw  
179           materials storage at an industrial plant) or construction activities (clearing, grading  
180           and/or excavating) must be authorized under an applicable National Pollutant  
181           Discharge Elimination System (NPDES) Sector Permit or the EPA Construction  
182           General Permit. Industrial stormwater discharges do not occur at the DoC Boulder  
183           Labs.

- 184  
185           (5) Management of Change  
186           On an ongoing basis, the Boulder Safety, Health and Environment Division (BSHED)  
187           Stormwater Program Manager shall:  
188  
189           (a) Evaluate new projects and changes to existing systems and equipment, to evaluate the  
190           applicability of State and/or Federal stormwater regulations or permit terms;  
191  
192           (b) Determine any necessary actions that must be taken by NIST prior to implementation  
193           (e.g., Best Management Practices [BMP] implementation, permit modifications); and  
194  
195           (c) Provide guidance to implement action items needed to ensure full compliance  
196           throughout the change process.

197 b. Permit Requirement Minimum Control Measures  
198 NIST shall implement BMPs necessary to meet the following minimum control measures, as  
199 outlined in the SWMP.

200

201 (1) Public Education and Outreach

202 Public Education and Outreach shall be provided through announcements in the Boulder  
203 Labs Weekly Bulletin. The processes for complying with this requirement may be found  
204 in the DoC Boulder Labs SWMP.

205

206 (2) Illicit Discharge Detection and Elimination and Reporting

207

208 (a) Spills and releases to stormwater, considered illicit discharges under the MS4 Permit,  
209 shall be reported in compliance with the NIST Boulder Occupant Emergency Plan  
210 (OEP).

211

212 In the event of an accidental or unauthorized discharge that may result in a violation  
213 of the permit requirements or negatively affect the environment, BSHED shall notify  
214 the following:

215

- 216 • Colorado Department of Public Health and Environment 877-518-5608
- 217 • EPA Region 8 303-312-6312
- 218 • City of Boulder 303-413-7340

219

220 (b) The NIST Boulder Program Manager shall perform dry weather screening by visually  
221 monitoring the following locations for sources of water other than previously  
222 identified sources. Dry weather screening shall be performed no less than seven days  
223 following a rain event and when there is no snow present to avoid misidentifying  
224 runoff as a possible illicit discharge.

225

226 i. Dry weather screening shall be performed at the following locations:

227

- 228 (i) Outfalls in the open space between Building 33 and Broadway  
229 (39.99063° N, 105.25824° W and 39.99190° N, 105.25950° W);
- 230 (ii) Stormwater basin south of Building 33 (39.98996° N, 105.25991° W);
- 231 (iii) Building 1 North Basin (39.99638° N, 105.26449° W);
- 232 (iv) Building 1 South Basin (39.99503° N, 105.26079° W);
- 233 (v) Drop inlet along Marconi Rd northwest of Wing 1 of Building 1  
234 (39.99618° N, 105.26370° W); and
- 235 (vi) Visitor Center Basin (39.99412° N, 105.25999° W).

236

- 237           ii. Each screening location shall be monitored for the following:  
238  
239               (i) Discharges not previously identified;  
240               (ii) Visible contamination; and  
241               (iii) Odors.  
242  
243           iii. The following sources of groundwater intrusion or discharges from  
244               dewatering have been identified:  
245  
246               (i) Condensate and dewatered groundwater from sumps in Building 33  
247               discharging to the outfalls in the open space between Building 33 and  
248               Broadway;  
249               (ii) Dewatering from Building 42 discharging to the basin south of  
250               Building 33 and swales in the open space between Building 33 and  
251               Broadway;  
252               (iii) Groundwater from foundation drains/sump at Building 81 discharging  
253               to the Building 1 North Basin and Skunk Creek.  
254               (iv) Dewatering from Wing 6 of Building 1 discharging to the Building 1  
255               South Basin, the City of Boulder storm sewer system and Skunk  
256               Creek; and  
257               (v) Dewatering from Wing 5 of Building 1 discharging to the City of  
258               Boulder storm sewer system under Broadway north of Building 1  
259               (monitored at a storm sewer drop inlet northwest of Wing 1).  
260  
261           iv. If needed sampling will be performed to identify contaminants;  
262  
263           v. Discharges of contaminants shall be reported per 6.b.(2)(a);  
264  
265           vi. The sources of discharges containing contaminants shall be investigated and  
266               the responsible OU or agency (if not part of NIST) shall be responsible for  
267               eliminating the illicit discharge; and  
268  
269           vii. The processes identified in the DoC Boulder Labs SWMP shall be followed  
270               by the personnel designated as responsible parties.  
271

272   (3) Construction and Stormwater Runoff Control

273   The processes identified in SOP #2 - *Construction Site Plan Review* of the DoC Boulder  
274   Labs Stormwater Management Plan shall be followed by the personnel designated as  
275   responsible parties. Best management practices (BMPs) for erosion and sediment control

276 on construction sites shall follow the specifications of the Mile High Flood District Urban  
277 Storm Drainage Criteria Manual.

278

279 (4) Post-construction Stormwater Management

280 The processes identified in SOP #1 - *Post-Construction Stormwater Planning and Design*  
281 in the DoC Boulder Labs Stormwater Management Plan shall be followed by the  
282 personnel designated as responsible parties.

283

284 (5) Pollution Prevention and Good Housekeeping

285 The processes identified in the DoC Boulder Labs SWMP shall be followed by the  
286 personnel designated as responsible parties.

287

288 (6) Public Involvement and Participation

289 The processes identified in the DoC Boulder Labs Stormwater Management Plan shall be  
290 followed by the personnel designated as responsible parties.

291

292 c. Monitoring and Reports

293

294 (1) Monitoring - Monitoring shall be conducted to evaluate the effectiveness of the  
295 stormwater management program, including evaluation of this Suborder and the SWMP  
296 to ensure that the requirements of the MS4 permit are met.

297

298 (a) An Annual Audit of the Stormwater Management Program shall be conducted by the  
299 BSHED Stormwater Program Manager to evaluate the effectiveness of the programs  
300 and BMPs implemented. The audit shall be completed in time to use the contents to  
301 produce the Annual Report and submit it to EPA by the April 1 deadline specified in  
302 the MS4 permit. Required information (inspection reports, maintenance procedures  
303 and reports and other documentation) shall be requested from the Office of Facilities  
304 and Property Management (OFPM) and GSA/NOAA by February 1 so the  
305 information can be provided by March 1 allowing sufficient time to complete the  
306 audit and annual report. The specific requirements and elements of the Annual Audit  
307 and report are detailed in the MS4 Permit and SWMP.

308

309 (b) The NIST Chief Facilities Management Officer (CFMO) shall ensure that the  
310 contracting officer representative (COR) for a construction project or other designated  
311 personnel monitor all contractor construction projects to ensure that BMPs for proper  
312 erosion and sedimentation control and/or stabilization are in place and functioning  
313 properly. This includes documented inspections to verify that BMPs are installed and  
314 maintained in accordance with the Mile High Flood District Urban Storm Drainage  
315 Criteria Manual on at least a monthly basis.

316 (c) The NIST CFMO shall ensure that in-house excavation and earth moving activities  
317 include properly implemented erosion and sedimentation controls and that these  
318 controls are effective. See the Mile High Flood District Urban Storm Drainage  
319 Criteria Manual for specifications.

320  
321 (d) BSHED shall periodically review construction activities and other activities on-site to  
322 ensure that proper stormwater management pollution prevention practices are in  
323 place. Reviews include:

- 324
- 325 i. Review of construction plans for compliance with the MS4 permit (post  
326 construction stormwater BMPs) and EPA Construction General Permit (CGP),  
327 including but not limited to the Stormwater Pollution Prevention Plan  
328 (SWPPP), and design/specifications for erosion and sediment control BMPs;  
329
  - 330 ii. Review monthly inspections performed by the COR or other Design and  
331 Construction Division-Boulder personnel;  
332
  - 333 iii. Quarterly inspections of construction sites permitted under the CGP;  
334
  - 335 iv. Semiannual sitewide inspections of outdoor research and maintenance areas,  
336 including dry weather screening and looking for illicit discharges;  
337

338 See SOPs 1, 2, 4, 5, 6 and 7 in the SWMP for the processes.

339  
340 (e) Currently, BSHED performs only qualitative monitoring of water quality. If negative  
341 impacts on water quality are suspected, The BSHED Stormwater Program Manager  
342 shall perform additional sampling or monitoring appropriate to the suspected  
343 contamination. See SOP #7 - *Stormwater Illicit Discharge Detection, Elimination and*  
344 *Reporting Program* for documentation of the inspection process.

345  
346 i. Stream monitoring shall be performed on a quarterly basis using the following  
347 process:

- 348
- 349 (i) Observing Skunk Creek and Anderson Ditch at the following points:  
350
    - 351 • Anderson Ditch at the northern boundary of the DoC Boulder  
352 Labs;
    - 353 • Anderson Ditch near the southern boundary of the DoC  
354 Boulder Labs;
    - 355 • Skunk Creek upstream of the Green Mountain Cemetery; and

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- Skunk Creek at the King Avenue bridge.
- (ii) Making a qualitative evaluation of the following:
  - Bank stability;
  - Presence of trash;
  - Color of water;
  - Odor from water;
  - Clarity/turbidity of water;
  - Presence/absence of floating solids;
  - Presence/absence of settled solids;
  - Presence/absence of foam; and
  - Presence/absence of an oil sheen.
- (iii) Reporting illicit discharges in accordance with 6.b.(3)(a).
- (f) The BSHED Stormwater Program Manager shall submit an annual report to EPA (address below) regarding the status of the stormwater management program. The report is due on 1 April of each year.
- (g) Reports shall be submitted to EPA at the following addresses:
  - U.S. EPA, Region 8
  - Policy, Information Management & Environmental Justice
  - Program (8ENF-PJ)
  - Attention: Director
  - 1595 Wynkoop Street
  - Denver, Colorado 80202-1129
  
  - EPA Region 8 Stormwater Coordinator
  - Mailcode: 8WD-CWW
  - 1595 Wynkoop Street
  - Denver, Colorado 80202-1129
- d. Maintenance
  - (1) Best management practices (BMPs) subject to this Suborder shall be maintained in a manner that ensures compliance with performance requirements established in the MS4 Permit. Stormwater management features require periodic maintenance, including

395 cleaning of debris, shoring, mulching, replanting, replacement of piping, etc. A program  
396 of scheduled preventative maintenance (PM), inspections of BMPs, and maintenance and  
397 repair areas has been established by the NIST Office of Facilities and Property  
398 Management. The PM inspections shall be tracked in the MAXIMO Asset Management  
399 System or a system replacing MAXIMO.

400

401 (2) Personnel identified as being responsible for maintenance activities in Section 9 shall  
402 ensure that maintenance is performed in compliance with the SWMP and MS4 Permit.

403

404 (3) Maintenance activities shall be documented per Section 6.g.

405

406 e. Evaluation of Compliance

407

408 (1) BSHED Stormwater Program Manager shall conduct a compliance evaluation of the  
409 regulatory requirements of this program on at least an annual basis. A spreadsheet  
410 identifying the requirements of the MS4 Permit and the status of actions implemented to  
411 comply with the requirements has been developed and is in use for this purpose.

412

413 (2) Results of compliance evaluations shall be documented and records maintained as EMS  
414 Records per Section 6.g.

415

416 (3) Findings from compliance evaluations shall be addressed using the requirements for Non-  
417 Conformances, Corrective and Preventive Action found in NIST S 7301.01.

418

419 f. Training

420

421 (1) Training required for Public Education and Outreach shall be provided to DoC Boulder  
422 Labs personnel in the form of announcements in the Boulder Labs Weekly Bulletin.  
423 Announcements cover pollution prevention, waste management and reporting of releases.  
424 Copies of announcements shall be included in the annual report.

425

426 (2) In order to meet the Illicit Discharge/Release Reporting requirements of the MS4 permit,  
427 NIST Boulder personnel shall complete the following training when applicable to their  
428 duties:

429

430 (a) [\*NIST S 7301.07: Accidental Hazardous Material Release Training for Users\*](#); or

431

432 (b) [\*NIST S 7301.07: Accidental Hazardous Material Release Training for Non-Users\*](#);

433

and

- 434 (c) [NIST S 7301.07: Hazardous Waste Generator Training for NIST Boulder](#) or [NIST S](#)  
435 [7301.07 Boulder Labs Hazardous Waste Generator Training for OFPM Boulder](#)  
436 [Personnel](#) either web-based or in a classroom session, if handling or generating  
437 hazardous waste.
- 438
- 439 (3) NIST Boulder personnel performing tasks related to petroleum storage tanks or oil-filled  
440 equipment shall complete one of the following division-specific courses as web-based  
441 training or in a classroom session.
- 442
- 443 (a) [NIST S 7301.09: Boulder Spill Prevention, Control and Countermeasures \(SPCC\)](#)  
444 [Training](#) (OFPM personnel)
- 445
- 446 (b) [NIST S 7301.09: SPCC Training for Division 184](#)
- 447
- 448 (c) [NIST S 7301.09: Spill Prevention, Control and Countermeasures Training for](#)  
449 [Division 647](#)
- 450
- 451 (d) [NIST S 7301.09: Spill Prevention, Control and Countermeasures Training for](#)  
452 [Division 688](#)
- 453
- 454 (4) Personnel responsible for construction or projects shall complete [NIST S 7301.11:](#)  
455 [Boulder Stormwater Compliance and Management on Construction Projects](#). Training is  
456 available as web-based or in classroom sessions.
- 457
- 458 (5) Contracting officers for any construction projects shall complete [NIST S 7301.11:](#)  
459 [Environmental Requirements for Construction Contracts – Boulder](#).
- 460
- 461 (6) Personnel with responsibilities for inspecting construction sites permitted under the EPA  
462 Construction General Permit shall be trained in the procedure for inspecting stormwater  
463 BMPs. This requirement includes completing [NIST S 7301.11: Construction Inspection](#)  
464 [Training Course - EPA National Pollutant Discharge Elimination System \(NPDES\)](#).
- 465
- 466 (7) Personnel responsible for facilities operation and maintenance shall complete [NIST S](#)  
467 [7301.11: Boulder Stormwater Compliance and Management for Operations and](#)  
468 [Maintenance](#). Training is available as web-based or in classroom sessions.
- 469
- 470 (8) The NIST CFMO shall ensure that job-specific training listed in the permit and SWMP is  
471 provided to personnel with responsibilities for maintenance, snow removal and  
472 pesticide/herbicide application duties.
- 473

474 g. Recordkeeping

475

476 (1) NIST shall maintain records as necessary to demonstrate compliance with the MS4  
477 Permit and other stormwater related regulations. These records shall be submitted to  
478 EPA upon request and shall be available to the public at reasonable times during regular  
479 business hours. To ensure proper identification, storage, protection, retrieval, retention,  
480 and disposal of records, EMS Records Management shall be performed in accordance  
481 with NIST S 7301.01.

482

483 (a) Records needed to demonstrate compliance with general MS4 Permit requirements  
484 shall be maintained by BSHED. See Section 9 for identification of parties responsible  
485 for keeping records. These include:

486

- 487 i. Annual reports identified in Section 6.c.
- 488 ii. Reports of releases to stormwater
- 489 iii. Regulatory Correspondence
- 490 iv. Audit Reports
- 491 v. Inspection Records
- 492 vi. Training Records
- 493 vii. Maintenance records
- 494 viii. Permit Applications and related information
- 495 ix. Current and Historic Permits, including Construction Permits
- 496 x. Current and Historic SWMPs.

497

498 (b) Records to demonstrate compliance with equipment-specific requirements of the MS4  
499 Permit shall be maintained by the various groups identified in Section 9.

500

501 (c) All records required by this Suborder shall be maintained for a period of no less than  
502 three (3) years after termination of the DoC Boulder Labs MS4 Permit.

503

504

505 **7. DEFINITIONS**

506 Definitions common to all NIST EMS suborders can be found in Section 7 of NIST O  
507 7301.00.

508

509 a. Contaminant – Any material that may negatively impact water quality. See *pollutant*.

510

511 b. NIST area-of-responsibility – The portion of the Department of Commerce Boulder Labs in  
512 which buildings, utilities, roadways, parking lots and facilities are owned by NIST. The  
513 NIST area-of-responsibility does not include open space or buildings, roadways, parking lots,

514 utilities and facilities owned by the General Services Administration (GSA) and leased by the  
515 National Oceanic and Atmospheric Administration (NOAA).

516

517 c. Pollutant – Per 40 CFR 122.2, any dredged spoil, solid waste, incinerator residue, filter  
518 backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological  
519 materials, radioactive materials (except those regulated under the Atomic Energy Act of  
520 1954, as amended (42 U.S.C. 2011 *et seq.*)), heat, wrecked or discarded equipment, rock,  
521 sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.

522

523 d. Post-Construction Stormwater Control Measures – Permanent stormwater control measures  
524 or BMPs designed to remain in place after completion of construction in order to retain,  
525 detain, infiltrate or treat stormwater discharges from impervious surfaces installed as part of a  
526 development or redevelopment project.

527

528

## 529 **8. ACRONYMS**

530 Acronyms common to all NIST EMS suborders can be found in Section 8 of NIST O  
531 7301.00. The acronyms specific to this suborder are as follows:

532

533 a. BMP – Best Management Practice

534

535 b. BSHED – NIST Boulder Safety, Health and Environment Division (153)

536

537 c. CFMO – NIST Chief Facilities Management Officer

538

539 d. CGP – EPA Construction General Permit

540

541 e. COR – Contracting Officer Representative

542

543 f. DAO – Department Administrative Order

544

545 g. DoC – U.S. Department of Commerce

546

547 h. EMS – NIST Environmental Management System

548

549 i. EPA – U.S. Environmental Protection Agency

550

551 j. FAR – Federal Acquisitions Regulations

552

553 k. MS4 – Municipal Separate Storm Sewer System

- 554 l. OEP – NIST Boulder Occupant Emergency Plan  
555  
556 m. OFPM – NIST Office of Facilities and Property Management  
557  
558 n. SPCC – Spill Prevention, Control and Countermeasures  
559  
560 o. SWMP – Stormwater Management Plan  
561  
562 p. SWPPP – Stormwater Pollution Prevention Plan  
563  
564

## 565 9. RESPONSIBILITIES

566 Roles and responsibilities common to all NIST Environmental Suborders can be found in  
567 Section 9 of NIST O 7301.00. The roles and responsibilities specific to this suborder are as  
568 follows:

- 569
- 570 a. Chief Safety Officer, as NIST’s designated Environmental Manager, is responsible for  
571 overseeing NIST’s efforts in complying with the requirements identified in this suborder.  
572
- 573 b. OU Directors are responsible for:
- 574
- 575 (1) Establishing implementation policies and procedures, as needed, for the requirements of  
576 this suborder to be met;
- 577
- 578 (2) Ensuring subordinate managers have the authority, resources, and training needed to  
579 implement OU-established policies and procedures;
- 580
- 581 (3) Ensuring illicit discharges resulting from OU activities are mitigated; and  
582
- 583 (4) Using OU funds to pay any civil penalties identified in regulatory inspections and  
584 resulting from regulatory violations in their respective OUs.
- 585
- 586 c. Division Chiefs and Group Leaders are responsible for:
- 587
- 588 (1) Implementing this suborder as it applies to activities involving their personnel and space  
589 in accordance with any applicable OU-established policies and procedures;
- 590
- 591 (2) Ensuring contaminants and pollutants are handled in a manner preventing illicit  
592 discharges;
- 593

594 (3) Ensuring division-owned bulk petroleum or chemical storage have control measures  
595 installed to provide secondary containment to contain spills and prevent spilled material  
596 from reaching receiving waters;

597  
598 (4) Ensuring releases are reported in accordance with NIST Boulder OEP;

599  
600 (5) Ensuring regulatory inspectors are provided access to areas under their supervision;

601  
602 (6) Upon receiving inspection reports on their respective workplaces, ensure corrective  
603 actions are performed in a timely fashion;

604  
605 (7) Ensuring deficiencies or violations resulting from regulatory inspections of areas  
606 operated by that OU are addressed in the timeframe required by the regulatory agency;  
607 and

608  
609 (8) Ensuring releases of pollutants (illicit discharges) caused by division personnel are  
610 sanctioned in accordance with DAO 202-751.

611  
612 d. NIST Boulder Employees, Associates and Contractors are responsible for the following:

613  
614 (1) Ensuring their activities do not release pollutants to stormwater;

615  
616 (2) Reporting to BSHED any activity that may release stormwater pollution or unauthorized  
617 discharges into the environment; and

618  
619 (3) Reporting any spills or releases to their supervisor or the COR for the project on which  
620 they are working (construction and maintenance contractors only).

621  
622 e. The BSHED Stormwater Program Manager is responsible for the following:

623  
624 (1) Providing support to laboratory personnel on appropriate practices for handling regulated  
625 wastes including hazardous waste, nonhazardous waste, universal waste, refrigerants and  
626 excess equipment;

627  
628 (2) Ensuring compliance with monitoring and reporting requirements established in the MS4  
629 permit;

630  
631 (3) Performing an internal compliance evaluation and program audit once per calendar year  
632 at a minimum to verify ongoing compliance with the MS4 Permit;

633

- 634 (4) Reporting to the EPA as specified in Section 6.c;  
635
- 636 (5) Communicating the regulatory requirements to affected personnel and providing training  
637 as necessary;  
638
- 639 (6) Providing informational outreach to NIST staff regarding stormwater and encouraging  
640 participation in local events;  
641
- 642 (7) Performing semiannual inspections of maintenance areas, outdoor storage areas, best  
643 management practices (BMPs) and stormwater controls in the NIST and GSA/NOAA  
644 areas-of-responsibility;  
645
- 646 (8) Performing annual dry weather screening as described in Section 6.b.(2)(b);  
647
- 648 (9) Performing a review of site design packages to ensure that the requirements of the MS4  
649 Permit are incorporated into any stormwater management element;  
650
- 651 (10) Performing field verification of construction projects to ensure that proper erosion and  
652 sedimentation practices are being employed and are effective, including:  
653
- 654 (a) Performing quarterly oversight inspections; and  
655
- 656 (b) Support to construction CORs;  
657
- 658 (11) Maintaining this Suborder and the SWMP.  
659
- 660 (12) Maintaining general records identified below:  
661
- 662 (a) Annual reports identified in Section 6.c;  
663 (b) Reports of releases to stormwater;  
664 (c) Regulatory Correspondence;  
665 (d) Audit Reports;  
666 (e) Inspection Records;  
667 (f) Training Records;  
668 (g) Monitoring reports;  
669 (h) Permit Applications and related information;  
670 (i) Current and Historic Permits, including Construction Permits; and  
671 (j) Current and Historic SWMPs.  
672

- 673 f. The NIST CFMO is responsible for the following in the NIST area-of-responsibility at the  
674 DoC Boulder Labs:  
675
- 676 (1) Evaluating, identifying, and documenting the municipal-type federal operations and  
677 facilities that are and/or have the potential to contribute nitrogen and phosphorus to the  
678 waters receiving the discharge authorized under the MS4 Permit;  
679
  - 680 (2) Developing written procedures for an operation and maintenance program for any  
681 maintenance activities and material storage to prevent or reduce nitrogen and/or  
682 phosphorus pollution in stormwater/surface water;  
683
  - 684 (3) Ensuring snow removal personnel are trained annually on snow/ice removal procedures,  
685 including prevention of the misuse or overuse of chemical deicers. Training shall be  
686 documented and provided to the program manager for inclusion in the SWMP;  
687
  - 688 (4) Developing, documenting, and implementing procedures and a schedule for cleanout of  
689 storm sewer inlets. Procedures and schedules shall be tracked to ensure prevention of  
690 significant deposition sediment and/or debris to receiving waters. The MAXIMO system  
691 (or its replacement) shall be used to track inspections. Procedures and schedules shall be  
692 reviewed and updated as necessary to ensure effectiveness. The procedures, schedule and  
693 inspection reports shall be provided to the program manager for inclusion in the SWMP;  
694
  - 695 (5) Installing and maintaining control measures to ensure the elimination or reduction of  
696 discharges of pollutants from maintenance or storage areas;  
697
  - 698 (6) Developing and maintaining a list and map/facility drawings of the following areas:  
699
    - 700 (a) Vehicle maintenance and washing facilities, motor pools with vehicle maintenance  
701 and washing, and loading and unloading areas;
    - 702 (b) Asphalt and concrete batch plants that are not subject to a separate NPDES permit  
703 coverage;
    - 704 (c) Solid-waste transfer stations where waste and recyclables are briefly held before  
705 further transport;
    - 706 (d) Dumpsters;
    - 707 (e) Concrete washout;
    - 708 (f) Equipment storage yards; and
    - 709 (g) Outdoor storage yards with exposed stockpiles of materials which may be reasonably  
710 expected to affect the quality of stormwater runoff, including stockpiles of road  
711 deicing salt, salt and sand, sand, and rotomill material, dirt, snow dumps, sweeper  
712 tailings and/or spoils, gravel.

- 713 (7) Implementing of control measures, including procedures and structural controls, to  
714 prevent or reduce potential discharges of pollutants, including:  
715
- 716 (a) Preventative Maintenance;
  - 717 (b) Good housekeeping;
  - 718 (c) Spill prevention and response procedures;
  - 719 (d) Structural controls;
  - 720 (e) Evaluation of non-stormwater discharges; and
  - 721 (f) Personnel training.
- 722
- 723 (8) Developing and implementing written inspection procedures, standard operating  
724 procedures and schedules for the following:  
725
- 726 (a) Annual inspection of areas identified as required under Section 9.f(6);  
727
  - 728 (b) Annual verification that the lists, maps, procedures, and controls required under  
729 Sections 9.f(6) and 9.f(7) accurately reflect current conditions;  
730
  - 731 (c) Visual observation of locations and areas where stormwater is discharged offsite or to  
732 receiving waters, including the following:  
733
    - 734 i. Observations for the presence of floating materials, visible oil sheen,  
735 discoloration, turbidity, odor, etc. in any stormwater discharge(s) and dry  
736 weather flows, if observed;
    - 737 ii. Observations of the condition of and around stormwater outfalls, including  
738 flow dissipation measures to prevent scouring;
    - 739 iii. Observations for the presence of illicit discharges or other non-permitted  
740 discharges; and
    - 741 iv. Visual observation of Facility conditions, including pollutant sources and  
742 control measures, to identify inadequate control measures and control  
743 measures requiring maintenance.
  - 744
  - 745 (d) Modification or replacement of inadequate control measures no later 6 months  
746 following visual inspection; or  
747
  - 748 (e) Development of a plan to modify the inadequate control measure, implement a  
749 maintenance plan to prevent failure install temporary measures and perform routine  
750 maintenance.
  - 751
  - 752 (f) Procedures must prevent or reduce pollution from the following:

- 753 i. Snow and ice removal;
- 754 ii. Operation and maintenance of the streets, roads, and highways;
- 755 iii. Operation and maintenance of parking lots;
- 756 iv. Operations at maintenance and storage yards;
- 757 v. Operations at maintenance shops with outdoor storage areas;
- 758 vi. Operation and maintenance of snow dumps/snow disposal areas;
- 759 vii. Operation and maintenance of sites used for temporary storage of sweeper
- 760 tailings or other waste piles;
- 761 viii. Park and open space maintenance;
- 762 ix. Building maintenance;
- 763 x. New construction of Permittee facilities;
- 764 xi. Application of pesticides, herbicides, and fertilizers;
- 765 xii. Large outdoor festivals and events;
- 766 xiii. Small construction projects;
- 767 xiv. Maintenance, replacement, and construction of utilities and the storm system,
- 768 including operations, such as storage, dewatering, or disposal, associated with
- 769 removal of sediment, debris, and other pollutant sources from the MS4,
- 770 including removal of materials, such as trash, from control measures, unless
- 771 covered by a separate NPDES permit; and
- 772 xv. Firefighting training activities.
- 773
- 774 (9) Ensuring that OFPM-owned bulk petroleum or chemical storage have control measures
- 775 installed to provide secondary containment to contain spills and prevent spilled material
- 776 from reaching receiving waters;
- 777
- 778 (10) Ensuring personnel having fleet or equipment maintenance responsibilities receive
- 779 annual training or briefing covering pollution prevention specific to the activities
- 780 identified in 9.f.(8)(f);
- 781
- 782 (11) Developing an inspection protocol for the activities identified in Section 9.f(1) to 9.f(8)
- 783 using the MAXIMO Asset Management System or system replacing it;
- 784
- 785 (12) Providing materials identified in Section 9.f(1) to 9.f(8) to the BSHED Stormwater
- 786 Program Manager for production of the annual report;
- 787
- 788 (13) Ensuring contracts include a requirement to design for and provide funding for the
- 789 installation of permanent stormwater control measures designed to retain, detain,
- 790 infiltrate or treat runoff from newly developed and redeveloped impervious surfaces in a
- 791 manner consistent with Control Measure Design Standards (See Subpart 2.5.9) for all
- 792 newly developed and redeveloped project sites which disturb greater than or equal to

793 one acre of land, including projects less than one acre that are part of a larger common  
794 plan of development. One of the standards below shall be met:

795  
796 (a) Infiltration Standard: The Control Measure is designed to infiltrate, through practices  
797 such as green infrastructure, a quantity of water equal to 70% of what the WQCV  
798 would be if all impervious area discharged without infiltration; or

799  
800 (b) Water Quality Capture Volume Standard: The Control Measure is designed to  
801 provide treatment and/or infiltration of the water quality capture volume, or

802  
803 i. 100% of the covered development project is captured, except the Permittee  
804 may exclude an area not to exceed the lesser of 1,000 square feet or 1% of the  
805 covered development project when the Permittee has determined that it is not  
806 practicable to capture runoff from portions of the site that will not drain  
807 towards Control Measures, and implementation of a separate Control Measure  
808 for that portion of the site is not practicable; and

809  
810 ii. Detention of the WQCV shall be a minimum of 12 hours but shall be extended  
811 as needed to meet the Control Measure requirements of this Permit.  
812 Evaluation of the minimum drain time shall be based on the pollutant removal  
813 mechanism and functionality of the Control Measure implemented.  
814 Consideration of drain time shall include maintaining vegetation necessary for  
815 operation of the Control Measure (e.g., wetland vegetation).

816  
817 (14) Ensuring appropriate City of Boulder and Boulder County officials and the Mile High  
818 Flood District are informed of any construction projects sites which disturb greater than  
819 or equal to one acre of land, including projects less than one acre that are part of a larger  
820 common plan of development and possible impacts to water quality in those  
821 jurisdictions;

822  
823 (15) Ensuring maintenance requirements for post-construction stormwater BMPs are  
824 incorporated into preventative maintenance plans and schedules;

825  
826 (16) Ensuring as-built drawings of post-construction stormwater BMPs are incorporated into  
827 facility drawings following completion;

828  
829 (17) Maintaining policies and/or procedures used to enforce construction site compliance  
830 within the DoC Boulder Laboratories and implementing procedures for documenting  
831 deficiencies in contract performance based on compliance with construction stormwater  
832 regulations;

- 833 (18) Developing and implementing a program to assure adequate design, implementation,  
834 and maintenance of BMPs at construction sites within the MS4 to reduce pollutant  
835 discharges and protect water quality;  
836
- 837 (19) Developing a list of design/installation specifications for acceptable control measures  
838 such as but not limited to sediment, construction site waste, trash, discarded building  
839 materials, concrete truck washout, chemicals, sanitary waste, and contaminated soils in  
840 discharges to the MS4. See Subparts 2.4.5.1 – 2.4.5.4;  
841
- 842 (20) Ensuring a Stormwater Pollution Prevention Plan is developed for all development or  
843 redevelopment projects exceeding one acre or part of a plan of development exceeding  
844 one acre in accordance with the requirements of Subpart 2.4.6.1 and kept up to date in  
845 accordance with Subpart 2.4.6.2.  
846
- 847 (21) Ensuring CORs or other designated personnel inspect construction sites in compliance  
848 with Subpart 2.4.6.3 and maintain inspections in accordance with Subpart 2.4.6.4.  
849
- 850 (22) Ensuring a closeout process for construction projects is implemented, stormwater  
851 controls are cleaned, in working order and 70% vegetative cover or other stabilization  
852 methods have been completed over all areas of the project site;  
853
- 854 (23) Ensuring an operation and maintenance program is implemented to reduce pollutant  
855 runoff from facilities operation and maintenance activities;  
856
- 857 (24) Ensuring an operations program is implemented to reduce nitrogen and phosphorus in  
858 runoff from maintenance activities, including:  
859
- 860 (a) Identification, evaluation and documentation of facilities operations and  
861 maintenance activities that have or have the potential to contribute nitrogen and  
862 phosphorus to stormwater or surface water;  
863
- 864 (b) Identification of locations where fertilizers are stored or used; and  
865
- 866 (c) Implementation of controls to prevent or reduce nitrogen and phosphorus from being  
867 discharged to stormwater or surface water.  
868
- 869 (25) Ensuring any nonconformance, release, or excursion is immediately reported to BSHED;  
870

871 (26) Ensuring complaints from DoC Boulder Labs personnel or the public regarding  
872 stormwater management and compliance are addressed when occurring in areas for  
873 which OFPM is responsible;

874  
875 (27) Ensuring up-to-date drawings of the storm sewer system are maintained. See SOP #3  
876 *Storm Sewer Map Updating* in the SWMP;

877  
878 g. NIST Boulder, Emergency Services Office, Emergency Coordinator is responsible for the  
879 following:

- 880  
881 (1) Ensuring Occupant Emergency Plan is followed during response to any emergency;  
882  
883 (2) Informing the DoC Boulder Labs Boulder Board of Directors of the emergency and the  
884 nature of the response; and  
885  
886 (3) Reviewing reports of releases submitted to regulatory agencies.

887  
888 h. Department of Commerce Police are responsible for the following:

- 889  
890 (1) Securing areas around reported releases;  
891  
892 (2) Notifying Emergency Coordinator of release;  
893  
894 (3) Serving as incident commander until relieved; and  
895  
896 (4) Assisting emergency responders from outside agencies (Boulder-Fire Rescue) with  
897 accessing the DoC Boulder labs facility and locating the release.

898  
899

## 900 **10. AUTHORITIES**

901 There are no authorities specific to this suborder alone. For authorities applicable to all NIST  
902 Environmental Suborders, see Section 9 of NIST O 7301.00.

903  
904 NIST/DoC and/or regulatory agency inspectors and inspection team members are authorized  
905 to:

- 906  
907 a. Enter without delay, and at reasonable times, any building, installation, facility,  
908 construction site, or other area, workplace, or environment where work is performed;

- 909           b. Inspect and investigate during regular working hours and at other reasonable times, and  
910           within reasonable limits and in a reasonable manner, workspaces including all pertinent  
911           conditions, structures, machines, apparatus, devices, equipment, and materials therein;  
912
- 913           c. Consult with a reasonable number of employees, associates or contractors during the  
914           walkaround;  
915
- 916           d. Question privately any worker, supervisor, or manager in charge of the workspace; and  
917
- 918           e. Deny the right of accompaniment to any person whose participation interferes with a fair  
919           and orderly inspection.  
920

921

922   **11. DIRECTIVE OWNER**

923   Chief Safety Officer  
924

925

926   **12. APPENDICES**

927

928   A. Revision History  
929

930

931 **Appendix A. Revision History**

932

Revision	Approval Date	Effective Date	Description of Change
1	03/14/2023	03/14/2023	None – Initial Document
2	11/19/2025	11/19/2025	Moderate revisions of Section 6 and Section 9 to reflect requirements of new MS4 Permit

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934

935

936

937