



**Environmental Review Form for Argonne
National Laboratory**

Form:	ANL-985
Version:	5
Your Form ID:	ANL-985-1486
Form Status:	Approved
Date:	7/6/2020 5:01:54 PM
Created By:	Pierce, Linda M.

Creator

Badge:	40750	Name:	Pierce, Linda M.
Cost Center:	254	Division:	WSH
Job Title:	QA Analyst / Environmental Engr	Employee Type:	Regular Full-Time Exempt
Building:	362	Lab Extension:	2-3857

General Information

Project/Activity Title: Real-time Control of Urban Drainage Systems
ASO NEPA Tracking No.: Type of Funding: LDRD
B & R Code: Identifying Number: 2021-0278
SPP Proposal Number: CRADA Proposal Number:
Work Project Number: ANL Accounting Number: (Item 3a in Field Work Proposal)
Other (explain):
List appropriate NEPA Owners:
Division: EGS NEPA Owner:

Financial Plans

To select a Financial Plan, click the magnifying glass icon to open a search window.

Cost Center: **166** Project: **PRJ1009154 CMD of Urban Waterway thru RT Sens.** Phase: **PH01 General** Task: **PT1397: General Costs**

Description of Proposed Action

This research focuses on building intelligent and resilient urban watersheds using a multi-disciplinary approach that (i) employs sensor and data acquisition technologies for improved and adaptive system-level performance, and (ii) utilizes systems science to integrate socio-political complexity into modeling and analysis of interdependent infrastructure systems. The development and installation of these sensor systems will occur in three phases: First, eight sensor nodes will be fabricated and connected to the autosamplers and sondes (one sensor node for each of the four autosamplers and each of the four sondes). This will take place in an Argonne laboratory in bldg 203. Second, the sensor systems will be deployed at four locations along the Calumet River, with the autosampler installed on land and the sonde installed in water. Third, the sensor systems will be maintained, with water sample bottles collected and replaced before and after significant storm events. The data collected from these systems will be used to build a predictive model for microbial dynamics during storm events.

Description of Affected Environment

Work conducted at the Argonne site will be simple benchtop R&D activities including building the sensor units and conducting water quality tests. Field sensors and water sample collection systems will be installed in four sites along the Calumet River. These sites are accessible by foot path or by boat. The units that will be installed are similar to existing units maintained by the Chicago Metropolitan Water Reclamation District (MWRD). The sensor sondes will be housed in a PVC pipe and affixed vertically to an already existing sonde housing structure, both of which are partially submerged in the respective waterway. The existing sonde housing in the picture (attachment 1) is owned and maintained by the Chicago MWRD. The autosamplers are separate from the sensor sondes, and sit on nearby grounds and/or docks. The autosamplers are used to collect physical water samples. They consist of an internal pump sampling bottles stored in a Storm/Box (two types of Storm/Boxes pictured in attachment 2). A plastic tube runs from the autosampler to the waterway and is submerged and held underneath the water surface by a holder such as the auger holder viewed in attachment 3. The bottles that contain the samples of water collected by the autosampler will be regularly collected and replaced, with the water samples removed for analysis. There will be no water or chemicals discharged into the waterway.

Potential Environmental Effects

- Attach explanation for each "yes" response near bottom of form.
- See Instructions for Completing Environmental Review Form.

Section A (Complete For All Projects)		Yes	No	Explanation
1.	Project evaluated for Pollution Prevention and Waste Minimization opportunities and details provided under items 2, 4, 6, 7, 8, 16, and 20 below, as applicable	<input checked="" type="radio"/>	<input type="radio"/>	Use of chemicals and generation of waste is minimized.
2.	Air Pollutant Emissions	<input type="radio"/>	<input checked="" type="radio"/>	
3.	Noise	<input type="radio"/>	<input checked="" type="radio"/>	
4.	Chemical/Oil Storage/Use	<input checked="" type="radio"/>	<input type="radio"/>	Water quality tests will be performed in the laboratory at Argonne National Laboratory. Chemicals include pH buffers, conductivity calibrator, ORP calibrator solution (potassium choride 72-78%, potassium ferrocyanide 10-15%), 0.1N Sulfuric Acid, and Quinine Sulfate dihydrate. These will only be used in the quantities as needed for standard water quality tests. Sealed 12V lead acid batteries and Lithium Ion batteries will be used for powering field equipment. Batteries chosen are sealed to prevent release.
5.	Pesticide Use	<input type="radio"/>	<input checked="" type="radio"/>	
6.	Toxic Substances Control Act (TSCA) Substances			
6a.	Polychlorinated Biphenyls (PCBs)	<input type="radio"/>	<input checked="" type="radio"/>	
6b.	Asbestos or Asbestos Containing Materials	<input type="radio"/>	<input checked="" type="radio"/>	
6c.	Other TSCA Regulated Substances	<input type="radio"/>	<input checked="" type="radio"/>	
6d.	Import or Export of Chemical Substances	<input type="radio"/>	<input checked="" type="radio"/>	
7.	Biohazards	<input type="radio"/>	<input checked="" type="radio"/>	
8.	Effluent/Wastewater (If yes, see question #12 and contact Peter Lynch (HSE) at 2-4582 or lynch@anl.gov)	<input checked="" type="radio"/>	<input type="radio"/>	Discharges from the laboratory sinks are piped to the lab drains. Argonne policies and procedures prohibit disposal of hazardous material, RCRA-regulated waste, down the drain per Argonne procedures.
9.	Waste Management			
9a.	Construction or Demolition Waste	<input type="radio"/>	<input checked="" type="radio"/>	
				Hazardous wastes will not be generated in the field (Calumet River sampling locations). Any hazardous wastes would only be generated at Argonne. All hazardous waste generated during the laboratory work at Argonne National Laboratory will be accumulated (in a Satellite Accumulation Area(s)) by qualified personnel who underwent Argonne-specific training.

9b.	Hazardous Waste	<input type="radio"/>	<input checked="" type="radio"/>	Requisitions for transfer of accumulated hazardous waste to a central on-site facility are completed by Argonne-certified personnel. The research personnel conform to the requirements in Argonne's Hazardous Waste Handling Procedures Manual. All on-site treatment, storage, and disposal would be performed in accordance with the RCRA Part B permit issued by the IEPA. The accumulated hazardous waste is disposed in accordance with Argonne's Part B permit, and in accordance with the requirement in Argonne's Waste Handling Procedures Manual and disposed through NWM.
9c.	Radioactive Mixed Waste	<input type="radio"/>	<input checked="" type="radio"/>	
9d.	Radioactive Waste	<input type="radio"/>	<input checked="" type="radio"/>	
9e.	Asbestos Waste	<input type="radio"/>	<input checked="" type="radio"/>	
9f.	Biological Waste	<input type="radio"/>	<input checked="" type="radio"/>	
9g.	No Path to Disposal Waste	<input type="radio"/>	<input checked="" type="radio"/>	
9h.	Nano-material Waste	<input type="radio"/>	<input checked="" type="radio"/>	
10.	Radiation	<input type="radio"/>	<input checked="" type="radio"/>	
11.	Threatened Violation of ES&H Regulations or Permit Requirement	<input type="radio"/>	<input checked="" type="radio"/>	
12.	New or Modified Federal or State Permits	<input type="radio"/>	<input checked="" type="radio"/>	
13.	Siting, Construction, or Major Modification of Facility to Recover, Treat, Store, or Dispose of Waste	<input type="radio"/>	<input checked="" type="radio"/>	
14.	Public Controversy	<input type="radio"/>	<input checked="" type="radio"/>	
15.	Historic Structures and Objects	<input type="radio"/>	<input checked="" type="radio"/>	
16.	Disturbance of Pre-existing Contamination	<input type="radio"/>	<input checked="" type="radio"/>	
17.	Energy Efficiency, Resource Conserving, and Sustainable Design Features	<input type="radio"/>	<input checked="" type="radio"/>	
Section B (For Projects that Occur Outdoors)		Yes	No	
18.	Threatened or Endangered Species, Critical Habitats, and/or other Protected Species	<input type="radio"/>	<input checked="" type="radio"/>	
19.	Wetlands	<input type="radio"/>	<input checked="" type="radio"/>	
20.	Floodplain	<input checked="" type="radio"/>	<input type="radio"/>	Sensing and auto sampling equipment are to be located on the banks of the waterways of Cal-Sag Channel, East Arm of Little Calumet River, and Little Calumet River. This is part of LDRD funded project that works with the Metropolitan Water Reclamation District (MWRD).. All sensor locations were identified with both ANL and MWRD personnel present in agreed upon locations.

21.	Landscaping	<input type="radio"/>	<input checked="" type="radio"/>	
22.	Navigable Air Space	<input type="radio"/>	<input checked="" type="radio"/>	
23.	Clearing or Excavation	<input type="radio"/>	<input checked="" type="radio"/>	
24.	Archaeological Resources	<input type="radio"/>	<input checked="" type="radio"/>	
25.	Underground Injection	<input type="radio"/>	<input checked="" type="radio"/>	
26.	Underground Storage Tanks	<input type="radio"/>	<input checked="" type="radio"/>	
27.	Public Utilities or Services	<input type="radio"/>	<input checked="" type="radio"/>	
28.	Depletion of a Non-Renewable Resource	<input type="radio"/>	<input checked="" type="radio"/>	
Section C (For Projects Outside of ANL)		Yes	No	
29.	Prime, Unique, or Locally Important Farmland	<input type="radio"/>	<input checked="" type="radio"/>	
30.	Special Sources of Groundwater (such as sole source aquifer)	<input type="radio"/>	<input checked="" type="radio"/>	
31.	Coastal Zones	<input type="radio"/>	<input checked="" type="radio"/>	
32.	Areas with Special National Designations (such as National Forests, Parks, or Trails)	<input type="radio"/>	<input checked="" type="radio"/>	
33.	Action of a State Agency in a State with NEPA-type Law	<input type="radio"/>	<input checked="" type="radio"/>	
34.	Class I Air Quality Control Region	<input type="radio"/>	<input checked="" type="radio"/>	

Categorical Exclusion

Other (Use field below to enter other categorical exclusion)

Offsite work falls under potential use of DOE-Appendix B3 Categorical Exclusion for Site Characterization, Monitoring and General Research

ANL NEPA Reviewer Use Only

- My approval is the final approval necessary
- This form requires additional approval from DOE

To be Completed by DOE/ASO

Section D	Yes	No
Are there any extraordinary circumstances related to the proposal that may affect the significance of the environmental effects of the proposal?	<input type="radio"/>	<input checked="" type="radio"/>
Is the project connected to other actions with potentially significant impacts or related to other proposed action with cumulatively significant impacts?	<input type="radio"/>	<input checked="" type="radio"/>
If yes, is a categorical exclusion determination precluded by 40 CFR 1506.1 or 10 CFR 1021.211?	<input type="radio"/>	<input type="radio"/>
Can the project or activity be categorically excluded from preparation of an Environment Assessment		

or Environmental Impact Statement under Subpart D of the DOE NEPA Regulations?

If yes, indicate the class or classes of action from Appendix A or B of Subpart D under which the project may be excluded:

This project may be excluded under 10 CFR 1021, Subpart D, Appendix B Categories: B 3.1 Site characterization and environmental monitoring B 3.8 Outdoor terrestrial ecological and environmental research

If no, indicate the NEPA recommendation and class(es) of action from Appendix C or D to Subpart D to Part 1021 of 10 CFR.

Attachments

File Description: attachment 1 Sonde installed in water [View Attachment](#)

File Description: attachment 2 Autosampler StormBoxes [View Attachment](#)

File Description: attachment 3 Holder for autosampler tubing [View Attachment](#)

Comments

Field work is anticipated to begin this year, 2021. Onsite lab work so far has been covered under a sitewide CX.

Add Approver

Approver Name	Approver Badge	Reason	Delete
Rimer, Sara Patricia	286802	Principal Investigator	
Lynch, Peter L.	46304	Environmental Compliance	
Grzymajlo, Jeffrey T.	97489	Waste Management	
Hummel, John R.	46980	Program Manager	
Wolf, Matthew Stern	296595	Division approval	

Notifications

The approval notification email will be copied to the people listed below.

Badge	Name	Division	Delete
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ASO-CX Number

ASO-CX- 383

Comments:

Approval

<u>Approver</u>	<u>Action</u>	<u>Date Routed</u>	<u>Action Date</u>	<u>Approval Reason / Comments</u>	<u>Approval Type</u>
Pierce, Linda M.	APPROVED	2021-03-22	2021-03-22 11:20:48.0	Creator :	PRIMARY
Pierce, Linda M.	APPROVED	2021-03-22	2021-03-22 11:20:48.0	Project Manager :	PRIMARY
Lynch, Peter L.	APPROVED	2021-03-22	2021-03-22 12:05:56.0	Environmental Compliance :	PRIMARY
Hummel, John R.	APPROVED	2021-03-22	2021-03-26 09:55:31.0	Program Manager :	PRIMARY
Grzymajlo, Jeffrey T.	APPROVED	2021-03-22	2021-03-22 13:31:26.0	Waste Management :	PRIMARY
Rimer, Sara Patricia	APPROVED	2021-03-22	2021-03-24 09:51:26.0	Principal Investigator :	PRIMARY
Wolf, Matthew Stern	APPROVED	2021-03-22	2021-03-23	Division approval :	PRIMARY

			09:26:57.0		
Harris, Amy M.	APPROVED	2021-03-26	2021-03-30 06:42:33.0	NEPA Owner Approval for Argonne Environmental Review :	PRIMARY
Ptak, Jill S.	APPROVED	2021-03-30	2021-04-06 09:54:13.0	ANL NEPA Reviewer : Offsite work. Per ECR: no dredging or filling, no discharging anything into the river. Any samples that are collected are taken to labs for analysis. All sensors and sample collection equipment will be retrieved after the project is concluded.	PRIMARY
Hellman, Karen B.	APPROVED	2021-04-06	2021-04-13 14:50:10.0	ANL-985 Review and Approval :	PRIMARY
Dunn, Michael W.	APPROVED	2021-04-13	2021-04-15 07:45:08.0	ANL-985 ANL Deputy COO Review and Approval :	PRIMARY
Joshi, Kaushik N.	APPROVED	2021-04-15	2021-04-20 10:17:59.0	ANL-985 DOE-ASO Review and Approval : This NEPA ERF CX approval by DOE is tracked as ASO-CX-383.	PRIMARY
Siebach, Peter Rudolf	APPROVED	2021-04-20	2021-04-20 15:50:03.0	ANL-985 DOE NEPA Compliance Officer Review and Approval :	PRIMARY



Figure 1. Example housing for water quality sonde.



STORM/BOX
LSCO

STORM/BOX
LSCO

LSCO

Example affixment for flowmeter sensor and autosampler tube.

