

Request for Approval to Fund Mission Essential Travel

Center/Office: CEMM/ACESD

Traveler(s): Tim Gleason, Laura Erban, Rick McKinney, Chris Knightes, Casey Tremper, Kaytee Canfield, Jim Hagy, Don Cobb, Darryl Keith, Jeff Hollister, Stephen Shivers.

Dates for Travel: February 16, 2021 – Feb 15, 2022

Episodic day trips to support the Nutrients Solutions Driven Research Pilot.

Travel Destination: Barnstable, Massachusetts, Three Bays watershed, Sand Shores neighborhood abutting Shubael Pond, Shubael Pond, Hamblin bog.

Describe Purpose of Travel (Field study: identify whether the travelers are participants in a non-EPA study or part of an ORD/EPA planned field study, mandatory training, attend conference, meeting etc.): Provide a brief description of the planned trip including the type of travel.

These travel events will support the ORD/EPA Nutrients Solution-Driven Research Pilot. This study has multiple elements requiring single day field sampling events including:

Enhanced Septic System Demonstration – (approximately 10-20 single day travel events over a 12-month period). We are working with federal (EPA Region 1 and USGS), state (MassDEP) and local partners, most notably the Massachusetts Alternative Septic System Test Center (MASSTC) and Barnstable Clean Water Coalition (BCWC), to evaluate the performance of Enhanced Innovative/Alternative (I/A) septic systems for source reduction in nitrogen impaired watersheds. We are contributing to the monitoring of existing groundwater monitoring wells and the installation of a cluster of additional wells during the late winter early spring 2021 and subsequent sample collection. Drilling will be performed by a contractor, with well construction and installation by USGS and EPA staff. Laura Erban, lead for coordinating the groundwater monitoring effort with USGS, will be onsite to during drilling and

sampling events. Tim Gleason is the science lead for the Nutrients SDR pilot and may attend well drilling operations and sampling events. We anticipate the installation of 12-15 enhanced I/A septic systems in April/May and will be onsite for initial installation and sampling.

Cranberry Bog restoration – (weekly one-day sampling events over a 12-month period) We are working with our partners, the Barnstable Clean Water Coalition (BCWC) to construct a woodchip-based bioreactor to evaluate its capacity for denitrifying groundwater moving through the bog. In addition to constructing the bioreactor, we will install the sampling wells and DO sensors within the bioreactor. The water sampling will involve one ACESD staff (Rick McKinney, primary, Chris Knightes and Tim Gleason secondary), to travel to the Hamblin Bog in Barnstable, MA once per week to collect water samples and check the DO sensors.

Episodic monitoring of nitrate sensor deployed at the exit of Hamblin bog, as well as, evaluation of flooded wetland. (estimate 6 visits – Laura Erban and Casey Tremper)

Cyanobacteria monitoring in Shubael pond – (approximately 10 -12 single day sampling events) to conduct monitoring for cyanobacteria in Shubael Pond. (Jeff Hollister, Stephen Shivers, Darryl Keith)

Estuarine data collection – (approximately 10 single day events from spring to winter) primarily deployment of DO and temperature sensors and potentially some additional benthic sampling, and water sampling – (Don Cobb, Rick McKinney, Jim Hagy, Casey Tremper)

Rationale for Mission Essential Travel: This section should briefly explain why this trip should be priority travel and describe the role of the traveler(s). If the traveler is planning to attend a conference, please identify the conference including the size of the conference (please include link to conference website).

The Nutrients Solutions-Driven Research (SDR) Pilot is one of two such ORD Pilot efforts initiated in 2018. The Nutrients SDR Pilot features intensive and active stakeholder engagement; co-development of research projects and outputs to solve stakeholder problems; and solutions that are transferable to other

systems. ORD has invested significant time and resources into the Nutrients SDR Pilot and we are now poised to begin implementing a suite of field interventions in the Three Bays watershed.

The field work discussed here is essential to continue progress on the Nutrients Solutions-Driven Research Pilot and broader efforts to mitigate excess nitrogen in impaired watersheds. If we can demonstrate that these interventions are effective, then our engaged network of stakeholders within and beyond this study watershed are ready to act on the information. Decision-makers in the states of MA, NY and FL and at The Nature Conservancy are seeking cost-effective and scalable remedies for excess nutrients in household wastewater.

Local partners have arranged for site permissions and access, along with many other logistics associated with the work. Once installed, we will revisit on a monthly to quarterly basis for sampling. The field activities described here accommodate the current need for social distancing while continuing our work on chronic environmental threats.

Expected Mode of Transportation (Air, Rail, POV):

GOV (one person per GOV) or POV for each day trip.

Just over the 50-mile local travel designation. The GOV will be no cost travel. If a POV is needed the driver will request mileage. No other travel costs are expected.

Brief Description of COVID-19 Safety Precautions:

Each person will self-certify using EPA guidance and we will request that all participating partners also self-certify:

https://intranet.epa.gov/covid19/docs/EPA_COVID19_Self-Assessment-07172020.pdf

Each person will drive separately. Anyone using a GOV will follow: “Best Practices for ACESD GOV Use during Covid-19 Pandemic”

Field work – all outdoor activities

We will wear masks when we cannot maintain social

distance. We will also follow all Massachusetts guidelines for Covid-19

The sampling teams have met with our SHEM, Gino Begluitti, who has approved our revised techniques to safely collect and process samples during COVID-19. Participation will be completely voluntary and subject to their personal discretion. We updated our protocols based on guidance from the following ACESD documents:

[ACESD recommended guidelines for labs](#)

[ACESD Boat Use Recommendations during COVID-19](#)

[ACESD vehicle use guidelines](#)

We will deploy the minimum number of people necessary to safely collect the data (usually one or two people). All personnel will commute in separate vehicles. All shared supplies will be handled with gloved hands. Gloves will be disposed of properly. Staff are aware that handwashing is a superior method of prevention; yet, will wear gloves when handwashing is not immediately available. Masks will be worn when 6 feet of separation cannot be maintained, in accordance with guidelines from the states of Rhode Island and Massachusetts. When samples are returned to ACESD laboratories for sample processing in the afternoon, each lab worker will work in separate laboratories so each room will have an occupancy of one. Any shared resources like sample coolers and dirty labware will be kept in the hallway outside the laboratories.

Source of Funding ORD ☒ Other ☐ _____

Signatures

X Alice Gilliland

Signed by: Environmental Protection Agency

Chris Hill

Approved _____ X _____ Disapproved _____