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Project Name: Southeast Utah Human Waste Initiative

1. Describe the purpose and need for the project.

The purpose of this project is to mitigate and remediate the impacts of improperly disposed of human waste on public lands across Grand, Carbon and Emery counties. Over the last several years the southeast region of Utah has experienced a rapid growth in recreation activities on public lands. Much of this has come with the designation of new trail and routes in wilderness and recreation areas with many of the visitor's camping in dispersed or undeveloped camping areas. The BLM now estimates approximately 3 million visitors to their Grand County administered lands alone. Through complaint-based investigation as well as discussion with the various land management agencies the Southeast Utah Health Department has determined a significant public health risk may be occurring as a result of improperly disposed of human waste. The primary health risk is a direct exposure to infectious disease transmitted through human feces, including bacteria, viruses and parasites. The secondary health risk results from coliform and E. coli contamination of ground and surface water within the regions watersheds.

The septic treatment and collection (SCAT) Machine is a portable toilet dumping station designed for use at marinas, river system take-out points, and anywhere "Honey Pot" type waste disposal is practiced. It is ideal for implementing sanitation programs in natural disaster areas, undeveloped countries, and undeveloped communities.

This system provides a user friendly, sanitary means to properly dispose of human waste. It can be connected to an approved septic leach line system or sewage treatment facility, or may stand alone with self contained vaults.

With its industrial grade components and stainless steel construction throughout, the SCAT Machine will yield years of low maintenance, low cost service. The machine, through various cycles and washing nozzles, produces a semi-high pressure, high volume wash that removes the waste from the portable toilet, rinses the toilet inside and out, and slurries the waste into a septic system ready form. It then discharges the waste into the septic system and performs a self rinse cycle that leaves the machine ready for the next use. A sanitizing agent can be used to add to sanitation and control odors. The SCAT Machine accepts the following types of toilets: 20mm ammunition boxes, 5 gallon plastic buckets, the Green Machine, the Johnnie Partner toilet, the Scat Packer, and other toilets of similar design.

2. Describe the scope of the project.

The scope of this project consists of three main objectives; mitigation, response, and remediation. It will be administered throughout the three counties of the Southeast Utah Health Departments jurisdiction which is comprised of nearly 6.2 million acres. The mitigation element will consist of a preventative education campaign, delivered through a new website, social media, traditional media, paid advertisements, and collaboration with state and local tourism agencies. This campaign will attempt to



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educate future visitors on local rules, guidelines and safe waste disposal practices. The response portion will involve in-person interactions and communication through patrols conducted by a seasonal health department employee. The purpose of these patrols will focus on two areas; disseminate information and educate visitors, and collect data via surveys and GIS. These patrols will not be engaged in enforcement action, but will coordinate closely with land managers and local law enforcement if such action is warranted. The third objective will be to remediate identified hazards. In coordination with land managers, heavily impacted areas deemed a public health risk may be temporarily closed while clean up takes place. The SEUHD may take responsibility for remediation efforts or coordinate clean up with responsible parties.

3. Describe the waterbody affected by the project including its 12 digit watershed code (HUC).

The project will encompass numerous hydrobasins in the Green and Colorado River Watersheds. In particular to Grand County are the Mill/Pack Creek hydrobasins in Spanish Valley. The hydrobasins are Lower Pack Creek, HUC 140300050403, Horse Creek-Mill Creek, HUC 140300050404, and the other hydrobasins associated with Mill Pack Creek HUCS that start with HUC 14030005. Hydrobasins also included in this project on the Colorado River, are essentially all the hydrobasins starting with 140300110101 through 140300050609 in Grand County. On the Green River there are numerous sub-hydrobasins included in the following major hydrobasins: Lower Green River HUC, 14060008; San Rafael HUC 14060009; Price HUC 14060007; and the Muddy HUC 14070002. These hydrobasins are generally rural in nature and contain large amounts of public land used for recreational purposes and dispersed camping.

4. Describe all existing watershed plans or TMDL's that the project will help implement.

The areal extent of this project is so large that there are numerous watersheds that do not meet the water quality standards for their designated use(s). The majority of these impairments have not had a Total Maximum Daily Load (TMDL) analysis. However, there are at least two watershed plans and one TMDL that this project could help implement. The Price River and Mill Creek/Pack Creek watersheds have both a TMDL and Watershed Plan that pertains to TDS. The TMDL performed for TDS on Pack Creek and perhaps the Price River should benefit from the project. However, this project could greatly benefit Mill/Pack Creek by helping implement the Moab Area Watershed Management Plan for E Coli contamination.

5. Describe the water quality benefits/number of people that will potentially be reached by the project.

The benefits to water quality contributed by this project include a reduction of coliform and E. coli loads within surface and ground water sources in the described watersheds. This project has the potential to effect public land throughout the State of Utah and beyond. The information and education campaign will reach the 40,000 fulltime residents of Carbon, Emery and Grand counties as well as over a million of annual visitors many of whom recreate in the rivers, streams and lakes of this region. The intent of

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this initiative is to educate outdoor enthusiasts and create an ethic of proper waste disposal that will be carried across the region.

6. Describe any survey work or evaluations that have previously been done to identify the audience or need.

Health Department staff have inspected highly impacted dispersed and undeveloped camping areas and have identified the need for this project. The need has also been identified through reports from the public and reports from partnering organizations, including BLM, USFS, SILTA, and Sovereign Lands. The Health Department will track usage of the SCAT machine and keep a log.

7. Describe how project effectiveness will be demonstrated.

There are limited numerical methods to measure the effectiveness of this project. It is expected that complaints to land management agencies will decrease. The actual amount of waste on public lands will decrease, and there will be increased sales and use of single use portable toilets (wag bags) and multiple use portable “potties”. A novel numerical method that Southeastern Utah Health Department will implement is through the use of surveys during the three year project. Individual surveys will be collected during routine patrols. These surveys will ask simple questions designed to demonstrate the awareness of visitors as to the rules and what waste disposal methods they are using. Over the course of three years we anticipate an increase in awareness and compliance with waste disposal practices. A complaint tracking system will also be used to monitor and evaluate trends over the projects life.

8. List Partners and agencies that have participated or will participate project development.

Partners include:

The Moab Area Watershed Partnership,
Bureau of Land Management: Moab Field Office and others
Manti-La Sal National Forest (US Forest Service)
National Park Service
United State Geological Society
State of Utah School and Institutional Trust Lands Administration
State of Utah Division of Forestry, Fire and State Lands (Sovereign Lands)
State of Utah Office of Tourism
Grand County Moab Area Travel Council
Grand County Trail Mix
Grand, Carbon, and Emery Counties, and
Watershed Coordinator for Grand and San Juan Counties

9. Provide a detailed budget table for the project showing all proposed expenditures. This budget should include all expenditures (i.e., personnel, operating expenses, professional/consulting services, construction, equipment over \$5000, supplies, travel etc.). Be sure to show which expenditures will be



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covered by the grant funding requested and what will be covered by matching funds, including the source of the match.

A Detailed budget is shown in Table 1

Expenditures	Amount	NPS Funding	Matching Funds
SCAT Machine	\$115,000	\$65,000	\$50,000 (Utah Office of Outdoor Recreation)
Administrative Costs	\$30,000		\$30,000 (SEUHD)
Donations	\$5,000		\$5,000
Media Campaign	\$10,000		\$10,000 (Travel Council)
Totals	\$160,000	\$65,000	\$95,000

10. Has the Division of Water Quality awarded funding to the applicant in the past? If so, list the year the grant(s) was awarded, and how much funding was received from DWQ. Please include a brief summary of the project work that was completed, and why additional funding is required.

The Southeast Utah Health Department (SEUHD) received funds in 2017 to install a storm water catchment and reuse garden at its Moab office to reduce TDS in Pack Creek. That project is successful and was completed in a timely manner and under budget.

In 2019, SEUHD received an initial grant of \$8,000 in grant funds for Phase I of an onsite wastewater digital database development for documenting historical septic permits and all future septic permits. The project is currently seeking more funds for Phase II of the project from the Utah Division of Water Quality. With additional resources, the project is set to be completed within the next two years.

In 2020, SEUHD received \$75,000 to help jumpstart the Human Waste Initiative and pay for two AmeriCorps Vistas.