

## **Summary of the recommendations of the Composting Toilet Seminar, Lama, 2014.**

*This is a brief summary of the research findings of our seminar this summer. For a more complete explanation please look at our power point presentation and at our excel file of options, available at the Lama Foundation website or by contacting [shaysalomonleonard@gmail.com](mailto:shaysalomonleonard@gmail.com).*

There are simple repairs and additions that would improve the Lama experience, and cost less than \$300 (plus volunteer labor). We recommend that we:

- In summer, give a trowel and/or a bucket to all stewards and anyone camping more than a few hundred feet from an outhouse, and instruct everyone in safe emergency toileting.
- In winter provide all residents with a bucket and toilet seat and instruct them in safe humanure collection and composting and construct bins or provide drums for humanure collection/processing.
- Regularly add more cover material to the outhouses-- per hole about and extra 5 gallons of sawdust or a grass or straw every few days during the busy summer season
- Occasionally add organically active material such as topsoil, effective microorganisms, forest duff, etc to the outhouse holes.
- Experiment with adding red wiggler worms.
- Add a black plastic pipe vent (with cover) one per outhouse

The next step we suggest is somewhat more complicated but still inexpensive (less than \$1500 plus volunteer labor):

- Hold workshops to construct arbolos or fossa alterna, and/or to repair the solar digester, so that there are toilets closer to campers and retreatants.
- Use workshops or seva team to upgrade the pee screens to make them more effective and more beautiful, and to add urine collection in a comfortable, seated, private area for less able-bodied guests.

The third step we suggest, which will require fundraising (\$8000-\$45,000, depending on how luxurious and abundant we want our

toilets to be) is to select one of the several options we have shown for a four-season, centralized system.

--If funding is unlimited, we recommend installing the Phoenix system in a new insulated and heated building, located approximately where the current main outhouse is, at a total likely cost of about \$45,000. One of the benefits of this option is that if the State were to inspect the system, they would likely be impressed since this is the system of choice for the Grand Canyon, and various state and national parks.

--A more frugal option is the Full Circle system, which may well be in fact a better system than the Phoenix, but has less of a track record. We suggest installing it in the Dew Drop, which could be renamed the "Do Drop." The current activities of the Dew Drop would be moved to the Old Lamassary. We estimate this could be done, with volunteer labor, for less than \$15,000. This seems like the most reasonable option, given the responses to our surveys this summer.

--The least expensive central option (but for summer-only use) is to build a double-chamber concrete vault-style composting toilet. Using this system, a new structure would be required, and it would not address the winter needs of residents. However, with volunteer labor it may be built inexpensively (less than \$3000 for a rustic building plus the concrete vault below).

--All the options we presented in the excel file seem reasonable to us.

*We were pleasantly surprised at how forthcoming the Lama Community was in the specifics of the toileting experience here, and appreciate everyone's honesty, good humor and time. We hope to return in the summer of 2015 to implement some of these options.*

Submitted by Gracybelle Broussard, Richard Lindley, Silvia Rayces, Shay Salomon and Lila Sideras, summer 2014