

Great Saltpetre Cave Preserve Committee Meeting

January 14, 2016 – Jerry Brandenburg’s house

Committee Members Present:

Jerry Brandenburg

Tama Cassidy (online)

Pat Hutson (online)

Neena Jud

Werner Jud

Scott Pavey

Dan Zubal (online)

Also attending:

Gary Bush (online)

Bill Carr (online)

Sean Cain (online)

Bob Dobbs

Patrick Gibson (online)

Dennis Green (online)

Darryl Marsh

Meeting started at 7:10 pm using the new GoToMeeting software purchased jointly by GCG, GSP & RKC.

Caretaker’s Report:

The water meter was replaced on Monday morning, initially set at zero. It is not leaking, the pit bottom is dry. Further down the hill, the new pressure regulator and its new vault are just as we left it.

Treasurer’s Report:

Income exceeded Expenses during the month of December 2015. Financial Report available upon request.

Werner did not have a budget report, but will recap 2015 and generate a 2016 proposed budget for next meeting.

Since we spent more than came in, we may not be able to transfer the \$1000 we budgeted into the Reserve Fund. To be decided at next meeting.

Old Business

WiFi modem/router: Currently available for \$40. Bill is waiting for a lower price. A new one is not needed until KOR to boost the signal for the vendors.

Water Regulator repair project went well. We owe a big thanks to Clifford Collins for supplying two parts the day before they were installed. And a big thanks to Keith Barbro for leading us through this project! The total cost will shake out in the next couple of weeks.

Hydrant in front of Showerhouse was also refurbished last weekend. It is no longer leaking.

Gravel Road Flood Mitigation Project: We were not awarded funding. The project proposal remains in the system and we can re-apply the next time a Federal Disaster is declared in Kentucky. We can also use the information to submit for other grant funding. Project proposal is included as an attachment to these minutes.

Management Plan: was submitted to the Executive Board of GCG at the Board meeting. Werner requested they review and approve it shortly so it can be submitted to RKC before their March Annual meeting.

GoToMeeting: This copy of the software, seems to be working rather well. Dan Zubal, Gary Bush, and Dennis Green worked together to get this. They shared the following observations from this initial meeting.

A little feedback can be heard when remote people have un-muted and are talking. This may be their microphones picking up the sound from their own speakers.

GoToMeeting has a limit of six screens that can be displayed at any one time. If remote people are not actively interacting on a particular topic, they can choose to turn their camera off. Only one camera will broadcast from the meeting site.

If someone has documents to share during the meeting, and is logged in with their computer, Dan can make their screen active so all can see. Alternatively, someone could email Dan a pdf, and he will share it while the person talks about it.

Dennis calculated GSP's portion of the GoToMeeting cost (including TechSoup activation fee) as \$116.88 and will send an official invoice to Werner.

GSP fundraising/friendraising: Bob will propose three dates to George Ridings for the white collar dinner in the Cave: May 7, May 28 or April 23, 2016.

School field trips are likely to be the last weekend in April through the first three weekends in May.

Amber Yuellig's Archeological investigation will likely be weekend of April 30th, which is also Open House work weekend.

Open House will be May 14-15, 2016.

Larry Simpson's daughter will have her wedding reception at GSP on May 21, 2016.

GSP Chores list: Decision to use Bob Dobb's General Chores List. Move "clean out culverts" to the Committee or Specified person's responsibilities. Add "Green Latrine Maintenance" to the list. Enlarge the upper list (General folks & Scouts) to a single page, print, laminate & post it at the Shelter & kiosk.

We will get back to assigning tasks to Committee members.

Tractor parts: Bill ordered them from Moon tractor. Delivery unknown. Bill decided against paying extra for expedited shipment.

Zero-turn maintenance: Bill will contact Cub Cadet in London to see if they have time to look at it now and provide an estimate for repair of hydraulics, maybe also blades & a few other things. He needs help to get it loaded on the trailer.

Archaeology Project in GSP: No new information from Amber Yuellig. Probably weekend for investigation is April 30, 2016.

Some apparent misinformation about this project was clarified by Tama Cassidy & Fred Ball at the recent DUG meeting.

Bank Accounts: Second signatory needed for our accounts. Darryl Marsh is discussing this with Werner.

Outlets at Electric Sites: Werner purchased replacement boxes & receptacles. Working with Dan Zubal to test alternatives to the plastic boxes which break easily. It was noted that the 5 gallon buckets over the posts seem to work satisfactorily. They hold up to drunk users, even at night. They are pest resistant, and do not overly bend cords when plugged in.

Keys: Remember, whenever someone leaves a position, please give the keys to your successor.

Scouting: Darryl Marsh went to the GCG meeting to encourage members to volunteer as guides or tailgunners. He proposed that the GSP & GCG chairs provide some prizes that could be raffled off to the volunteers at the end of the year. It was agreed that GSP will provide two family camping passes for this purpose.

It should also be noted that high school students can get “volunteer hours” for tailgunning. This helps meet the graduation requirements for many high schools.

New Business:

Long-time caver, Larry Simpson recently renewed his membership in GCG and requested the use of the Cave and Shelter on Saturday, May 21, 2016 for his daughter’s wedding. Agreed.

Larry also mentioned that some tools & construction materials like culvert pipes have been left at Squalid Manor (which is no longer used by cavers) that might be useful at GSP. We will respond that we should visit to assess the stuff before accepting.

The GCG Library is mostly now in Jerry Brandenburg’s basement. Not accepting any more magazines or newsletters.

Mike McNabb, former Committee member for five years, will be renewing his GCG membership and will probably visit the Preserve with his family on a coming weekend.

Proper Meeting Minutes Procedures include getting acceptance of the last month’s minutes by Committee members. This can be done by reading the minutes aloud at the beginning of the meeting, or by asking if they have been read. This should include a request for any corrections or amendments. Decided to resume this procedure at the next meeting and ask for a vote to accept the minutes.

Meeting ended at 8:32 pm.

**Next meeting will be:
7:00 pm February 11, 2016 at Jerry Brandenburg’s home.**

Mitigation Action Form (MAF)

Supporting Details

Step 1

Project Title

Great Saltpetre Cave Preserve Roadway Flood Mitigation Project

Step 2

Applicant Type

Non Profit 501(c)(3)

Disaster Funding Source - Federal Disaster

Disaster 4239: Severe Storms, Tornadoes, Straight Line Winds, Flooding, Landslides and Mudslides

Applicant

neena.jud

Point of contact

Neena Jud

Sub-Applicant

Rockcastle Karst Conservancy

Step 3

Project Description

The Great Saltpetre Cave Preserve, which is owned by Rockcastle Karst Conservancy (RKC), a 501c3 non-profit organization of all volunteers, is a 306 acre tract of forested hillsides and open bottom land in rural Rockcastle County. The main entrance to the Great Saltpetre Cave, historically well known in this community and listed on the National Register of Historic Places (#13000565) in 2013, can be found in this Preserve partway up the hillside from Crooked Creek.

Although the Cave and Preserve are normally closed, we open it for educational purposes such as Scout troops overnight camping and caving, field trips for local schools focusing on science of karst and caves as well as history, and our annual Open House during which 1500 people may tour the Cave over the two day weekend. The maintenance of the Preserve is funded completely by donations from visitors such as these.

The private gravel roadway that leads from the upper parking lot down the hill to the lower field and parking area has sustained considerable damage due to severe rains creating localized flash flooding this summer. The rains wash out the gravel roads creating severe rutting and deposits of gravel off the side of the road. This problem has steadily worsened over the twenty five years we have managed the Preserve, such that we re-gravel the road every other year. This year it washed out within six weeks, and some of the gravel flowed down a 40 foot elevation change through the forested hillside to the lower campground.

The Committee needs to improve this 865 foot section of gravel roadway to minimize flood damage to the roadway and slow the water velocity as it is discharged off the side of the road. This project includes re-cutting the swales, installing catchbasins with pipe culverts, installing open top culverts in the roadway, and constructing rock dispersion structures at the outlets of all the culverts. This work will collect most of the surface runoff into the swales, routed under the road surface. The rainwater that falls on the roadway will be collected in the open top culverts and diverted off to the side preventing the water from increasing in velocity to scouring strength. As a result, this roadway will last longer with specific maintenance to clean out the catch basins, open top culverts and the rock dispersion structures. In addition it will be easier to navigate by school buses as well as the average personal vehicle.

Project Type

- Drainage

CRS Participant

- No

Community NFIP Status

- Active

In NFIP Good Standing

- Yes

Step 4

MAF Location

linestring

Project Location – Jurisdiction

- Rockcastle County

Applicable Hazard Mitigation Plan

- Cumberland Valley Development District 2012

Set a Priority for your MAF

- Very High

Hazard Mitigated

- Flash Flooding

Step 5

Does the project impact critical facilities?

- No

Does the project impact facilities with repetitive loss?

- Yes

Does the project impact facilities with sever repetitive loss?

- No

Will the project impact future buildings or infrastructure?

- Yes

Does the project impact existing buildings or infrastructure?

- Yes

Approximately how many people does this project impact?

- 4200 visitors

Does the project impact a small or impoverished area?

Defined by all of the following: rural or very rural, population less than 3,000 people, unemployment higher than 1% above national average, and one more. Check Bureau of Labor Statistics for rate

- No (Rockcastle is 5.3% unemployed for Sept 2015 vs National rate of 5.0%)

Is any part of the project in a mapped 1% floodplain?

- No

Is any part of the proposed project located in a mapped floodway?

- No

Step 6

Describe the problem your community is encountering in the location of the proposed project.

Severe rutting is occurring in this section of private gravel roadway during heavy rains and flash flooding events. This is the primary route used to access the main parking area, most of the campground and the Shelter. These facilities encompass most of the support spaces for Great Saltpetre Cave. As the roadway becomes more rutted, it is difficult for the average car and school busses to negotiate.

Describe the proposed mitigation action that will solve the problem.

1. Re-cut the uphill side swale to carry the calculated flow volumes. This will be in two sections.
2. Install a new catch basin just before "the tractor barn driveway", discharging into a pipe culvert crossing the road into a rock dispersion structure.
3. Install a new catch basin just before "the steps to the Cave", discharging into a pipe culvert crossing the road into a rock dispersion structure.
4. Install open top culverts across the roadway to collect the surface run-off, preventing it from increasing velocity and scouring the road surface. At least five open top culverts will be required for this length and slope of roadway. Discharge these into rock dispersion structures on downhill side.
5. Restore and re-compact subgrade. Install DGA surface course.
6. Add vegetation filter areas on downhill side of roadway.

Step 7

Please describe the precise location of this project

Great Saltpetre Cave Preserve is located at 237 Saltpetre Cave Road (or Big Cave Road) Mt. Vernon, Kentucky 45056 in Rockcastle County. The entrance to the Preserve is just beyond mile marker 9.1 on 1004. One drives into the Preserve on asphalt pavement for about 500 feet to an upper parking area (used for HC parking) and our Caretaker's residence. The private gravel roadway that leads from this upper parking lot down the hill to the lower field and parking area near the Shelter is the subject of this project application. This project will mitigate flooding damage to 865 feet of private gravel roadway of which the last 315 feet is within the National Register of Historic Places District Boundary.

Describe why your community has decided to submit this project. How was the project idea initiated?

As Managers of the Preserve, we have been providing value to the local community through our annual Open House and our educational field trips offered in the Spring and Fall. Volunteer tour guides share the history of the Cave as well as the science of cave formation, the role caves place in clean water in Kentucky, and life found in and around caves. There is no charge for these tours, but we gladly accept donations which go towards the maintenance of the Preserve. We receive an average of one dollar per person during Open House and from fifty cents to a dollar per student, depending upon the relative prosperity of the school.

We carefully plan our maintenance budget each year to balance with the projected income from donations and the few souvenirs we sell. Our annual budget has been hovering just over \$20,000 for the past ten years. The estimated costs of this project exceed our total annual budget. We submit that the value we have provided to the State of Kentucky through educational field trips for at least the past eleven years and the care and preservation of a natural resource which is part of

Kentucky's history (as evidenced by the listing in the National Register of Historic Places) qualifies this project for consideration for Hazard Mitigation Grant Program funding.

This project idea has been simmering for a number of years as we have seen the rutting of the roads getting progressively worse, despite our repair measures. It is clear that the people who first constructed this road (probably in the 1960's) chose the most gently sloped route to the bottom land. Our Committee members have researched Best Management Practices for gravel roads in Forest Management areas and concluded that the multiple measures in this scope of work will effectively address the problem of extreme ruts in this gravel road at a reasonable cost and without changing the appearance of the road and adjacent areas.

Step 8

Funding Breakdown

Estimate Total 28060

Provide funding sources and estimated amounts for this project. The source of the Local Match must be explained (e.g. local funds, in-kind contributions of services and materials, other outside grants, etc.)

Local Share of \$3648 will be provided by: volunteer labor (value \$6240), any balance will be paid from our Property Maintenance budget.

Funds donated by the Greater Cincinnati Grotto earmarked for road repair (\$600)

Step 9

Attach Supporting Documents (File Title, and File Description)

Roadway_Prelim_Cost_Estimate.pdf Preliminary Estimate of Cost of Construction including contingency and management allowance.

Drainage Project Worksheet Attachment – GSP_11-12-2015.pdf Information relative to specific required attachments for Drainage projects. This includes comments about the Site Plan attached, and the calculations which will be provided with the full application. In addition there are preliminary comments about the Environmental Impacts, LOMR, and Scheduling.

FIRM-21203C0225C_8-3-2009_GSP.pdf Federal Insurance Rate Map

GSP_RoadwayFloodMitigationProject_SitePlan_2015.pdf Site Plan showing location of project as well as the National Register of Historic Places District Boundary around Great Saltpetre Cave.

Step 10

Attach project worksheet

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**Great Saltpetre Cave Preserve
Roadway Flood Mitigation Project
Preliminary Cost Estimate**

Item	Quantity	Units	Unit price	Total
Open top culverts	5	ea	\$350	\$1,750
Catch basins with grate	2	ea	\$1,050	\$2,100
20' CPM culvert pipe	2	ea	\$365	\$730
DGA top course				\$1,000
#2 subgrade				\$1,000
Riprap & geotextile fabric				\$1,000
Machinery rental (incl fuel)				\$4,000
Fuel reimbursement (volunteer)				\$750
Miscellaneous supplies				\$750
Volunteer Labor (equipment operator)	8	man-days	\$180	\$1,440
Volunteer Labor (construction work)	32	man-days	\$150	\$4,800
Engineering	40	hours	\$125	\$5,000
Contingency (10%)				\$2,432
Management (4.89%)				\$1,308
Total Project Budget				\$28,060

Drainage Project Worksheet Attachment – Drainage Projects Only**a. Site Plan**

A site plan, with alignment drawings, that includes the location, plan view and cross-section of cuts, fills and structures are required. Include the type, and measurements of all pipes, culverts, ditches, swales and detention/retention basins and ponds. Send the following engineering as appropriate:

Calculations used to determine the sizes of any culverts in the project area (drainage area, amount of flow, slope of culvert, invert elevations).

Calculations used to determine the sizes of any ditches and swales in the project area (drainage area, amount of flow, slope and depth in the ditch).

Calculations used to determine the sizes of any detention/retention basins or ponds (drainage area, amount of flow, stage-storage, and stage-discharge curves).

b. Environmental Impacts

Both upstream and downstream impacts need to be considered and discussed in the NEPA documents and coordination letters.

c. Letter of Map Revision (LOMR)

A letter of Map Revision may be needed on this project. Any changes to the Flood Insurance Rate maps (FIRMs) need to be reflected on the flood maps, which is accomplished through the LOMR process. The construction of this project may lower the 100-year flood elevation and thus, possibly lower the flood insurance rates for structures in the project area.

d. Project Scheduling

Note below any special circumstances regarding project scheduling.

Drainage Project Worksheet Attachment – Drainage Projects Only

a. Site Plan

A site plan is attached showing:

- The District Boundary for the National Register of Historic Places listing;
 - the section of roadway in red;
 - locations of swales, catch basins, culverts, open top culverts, and rock dispersion structures at the culvert outlets.
- Calculations used to determine the sizes of any culverts in the project area (drainage area, amount of flow, slope of culvert, invert elevations).

Calculations will be provided as part of the full application.

- Calculations used to determine the sizes of any ditches and swales in the project area (drainage area, amount of flow, slope and depth of the ditch).

Calculations will be provided as part of the full application.

b. Environmental impacts

Both upstream and downstream impact will be considered and discussed in the required NEPA documents and coordination letters as part of the full application.

In brief there will be no change in the pervious/impervious surfaces nor forest/grassland cover within the drainage area and the flow to Crooked Creek. This project will assure the capture of the surface flow approaching the roadway, and discharge onto the downhill side preventing it from scouring the surface. In addition, the surface water on the roadway will be captured before it can pick up sufficient velocity to scour the surface. Finally the culverts will discharge into rock dispersion structures, breaking up the water flow to enable more of it to percolate into the ground.

Excavators or bobcats used in this project will be primarily on the roadway with possible occasional movements into the swale. The construction zone will be approximately 25-30 foot wide, and is previously disturbed – to construct the roadway in the 1960's. Erosion control measures will be utilized during construction and maintained after construction until vegetation is re-established.

A statement of impact to Section 4(f) Property will be included as part of the full application.

In brief, the subject of the listing is the Cave which runs through the hillside at or above elevation 1100' in the St. Genevieve member of the Newman limestone formation. This project will occur below this elevation running through the St. Louis formation, into the Renfro Member of the Borden formation and onto the alluvium near Crooked Creek, having no impact on the Cave whatsoever. This is a karst landscape, and although there are outcroppings of limestone at or near the surface, caves are very rare in the lower portions of the St. Genevieve and the St. Louis on the Preserve.

Five bat species have been known to visit and roost in Great Saltpetre Cave. Some of these bats sleep in portions of the Shelter roof and have been seen flying around the Shelter, the bottom land, and especially over the Creek in the evenings while feeding. All our volunteers are concerned about the health of bats and participate in educating visitors about their importance. None have been observed in or near the relatively young trees or undergrowth along the swale that might be disturbed by this construction work.

c. Letter of Map Revision

The LOMR will not need to be completed as part of this project.

d. Project Scheduling

We prefer to perform this work in August due to the historically low amount of rainfall during this month combined with the availability of our volunteers at this time (not otherwise busy planting or harvesting crops, nor actively working on other events at the Preserve).