

Lost River Cave and Valley

Interpretive Master Plan



November, 2006



Lost River Cave and Valley

Interpretive Master Plan

Submitted to Friends of Lost River Cave and Valley
November 17, 2006

Prepared by:

Schmeeckle Reserve Interpreters
University of Wisconsin-Stevens Point
Stevens Point, WI 54481
Phone: (715) 346-4992
E-mail: schmeeckle@uwsp.edu

Ron Zimmerman, Michael Gross, and
Jim Buchholz

Table of Contents

Purpose of this Plan.....	vi
Chapter 1: Introduction.....	1
A Brief History.....	2
Lost River Cave and Valley Mission	5
The Need for this Plan	6
The Planning Process	7
Chapter 2: Vision for Program and Facility Development.....	9
Methods for Vision Assessment	10
Goals of the Lost River Cave and Valley.....	12
Chapter 3: The Audience	17
Sources of Audience Data	18
Target Audiences.....	19
Serving the Needs of Tourists	21
Marketing for Tourists.....	23
Marketing the LRC&V Experience	24
Serving the Needs of Schools.....	26
Marketing to Schools and Youth.....	27
Serving the Community	28
Community Target Markets.....	28
Serving Western Kentucky University	30
Chapter 4: Resources, Themes, and Messages.....	33
Relationship to Other Kentucky Cave Attractions.....	34
Tangible Site Resources	35
Intangible Meanings	36

Themes and Messages	37
Primary Theme	37
Sub-theme 1: “Living in Karst Country” and Messages	38
Sub-theme 2: “Cave Critters” and Messages	39
Sub-theme 3: “Life in the Valley and on the Ridge-Top” and Messages.....	41
Sub-theme 4: “Prehistoric Indians” and Messages	43
Sub-theme 5: “The Cave Mills and the Louisville- Nashville Turnpike” and Messages.....	45
Sub-theme 6: “The Civil War and Lost River Cave” and Messages.....	49
Sub-theme 7: “The Dixie Highway and Lost River Cave Night Club” and Messages.....	51
Sub-theme 8: “A Community Saves a Cave” and Messages	55

Chapter 5: Interpretive Facility and Site Development..... 57

Lost River Cave and Valley Visitor Center	58
Purpose.....	58
Design Elements.....	60
<i>Foldout: Conceptual Elevational</i>	60+
<i>Foldout: Conceptual Floorplan</i>	60+
Interior Design.....	61
Bubble Diagram.....	61
Entry and Assembly Hall.....	62
Service Desk.....	64
Restrooms	65
Theater and Exhibit Hall.....	65
Sales Area	67
Multi-purpose Meeting Room.....	68
Entrance Drive.....	69
Parking.....	70
Walkway to the Building.....	71
Decks.....	72
Tour Gathering Area	72

Use of Existing Buildings

Administration Building.....	73
Maintenance Building	73

Trails and Wayfinding	74
Trailheads	75
Maps.....	75
Trail Design	77
Orientation Hub	78
Class A Trails.....	79
Class B Trails	80
Greenway Trail Corridor.....	81
Development of New Trails and Closure of Old Trails	82
<i>Foldout: Site Map, New and Existing Trails</i>	82+
<i>Foldout: Site Map, Trail Classes, Service Roads, and Gates</i>	82+
Service Roads	83
Restoring and Managing a Nature Sanctuary	84
Valley Sanctuary	85
Big Barrens of Kentucky Restoration	86
Narrative Walk-Through	89
Chapter 6: Interpretive Media and Experiences	95
Developing Experiences	96
Evaluation of Existing Programs and Media	99
Evaluation of Cave Tours.....	99
Personal Interpretation Recommendations.....	100
Evaluation of Signage.....	101
Recommendations for Signs	102
Unified Design Standards	104
Recommended Design Standards for Interpretive Panels	106
Interpretive Panel Fabrication and Installation	107
Unifying Panel Layouts.....	108
<i>Foldout: Interpretive Panel Layouts</i>	108+
Experience Hubs Overview	110
Visitor Center Experience Hub and Media	112
Gateway to the Lost River.....	112

“The Spirit of Lost River” Theater Production	114
Living in Karst Country	118
Discovery Cave Walk (Troglophile Walk).....	120
The Great Civil War Oasis.....	122
Believe It or Not!	124
Saving Lost River Cave	125
Orientation Hub and Media	126
Lost River Cave Experience Hub and Programs	128
Dance Floor Experience Hub and Media	130
Cave Mill Experience Hub and Media	132
Barrens and Old Kentucky Homestead Experience	
Hub and Media.....	134
Early Tourists Experience Hub and Media	136
Chapter 7: Summary of Recommendations	139
Proposed Course of Action	140
Recommended Phases of Development.....	142
Phase #1	142
Phase #2	145
Phase #3	147
Appendices.....	149
Appendix 1: Visioning Focus Group Meeting	150
Appendix 2: Visitor Surveys	154
Appendix 3: Barrens Prairie Survey	159

Purpose of this Plan



Entrance waterwheel. November, 2005.

In January, 2006, Lost River Cave and Valley entered into a contractual agreement with Schmeckle Reserve Interpreters, Stevens Point, Wisconsin, to develop an Interpretive Master Plan to “guide the development of the site, facilities and programs.” The purposes of this plan are to:

- Guide decision makers by documenting the vision of the planning team and providing resources to help future staff achieve the mission and goals of the facility.
- Serve as a catalyst for fund-raising, marketing and communicating the Lost River Cave vision to the community.
- Provide a record of the rationale and parameters that will guide the development of the Lost River Cave and Valley.
- Serve as a visual and narrative communication tool for future consultants, architects, program designers, and staff.

As specified in the contract, this Interpretive Master Plan includes the following sections and activities:

1. **Vision analysis:** Identify and analyze management needs. Affirm the Lost River Cave’s mission and goals. Develop a consensus of the overall vision (primary mission, goals, and objectives) for future development.
2. **Audience analysis:** Research the interests and needs of visitors to the Lost River Cave. Identify target audiences that will guide the development of interpretation on-site.
3. **Resource inventory:** Identify and document the significant tangible resources that connect visitors to the meaningful stories of Lost River Cave and the region.
4. **Theme framework:** Based on the vision, resources, and audience, develop a framework of themes and messages that unite and organize the stories of Lost River Cave into a cohesive experience for visitors.

Prioritize the most important stories into a matrix, identify effective delivery modes for messages (personal tours, media), and designate target audiences for specific messages and delivery modes.

5. **Site development:** Plan for overall site development, which includes public wayfinding (directions signs, maps, trails, entries, parking areas) and non-public service access (maintenance, emergencies, etc.). Identify and analyze current traffic flow through the site, and provide recommendations on future traffic patterns that will enhance visitor experience and efficiency.
6. **Interpretive facility development:** Plan for new Lost River Cave interpretive facilities. Provide detailed descriptions and conceptual drawings of the building uses, space needs, aesthetic considerations, and media components. The Master Plan will serve as a thorough Architectural Program that will better facilitate the effort of preparing a request for proposal from architectural firms, while guiding the overall design of the building.
7. **Media Guidelines:** After analysis of existing services and media, develop guidelines and standards for interpretive media that most effectively interpret the Lost River Cave and Valley in a consistent and user-friendly manner. Create prototype designs that will facilitate the production of future media.
8. **Media and Program Concepts:** Recommend specific types of media and programs that can effectively connect visitors to the stories of the Lost River Cave. Create full-color conceptual drawings, describe the purpose, and develop objectives for each component.
9. **Special audiences:** Recommend resources and media for audiences with special interests related to the site.



Blue hole #3. March, 2006.

This plan reflects the collective input of the many stakeholders and clients of Lost River Cave and Valley who expressed their ideas in interviews and visioning meetings. It is tempered by the knowledge and insights of the interpretive consultant team who specialize in the development of similar plans and products.



Chapter 1—

Introduction



Lost River Cave and powerhouse. November, 2005.

For more than ten thousand years, people have been attracted to the Lost River Cave and Valley, in search of sustenance for the body and spirit. The promise of adventure and meaningful experiences still beckons visitors and school children. A powerful “spirit of place” emanates from the rich history of the site. The cave and valley are invaluable treasures for the Bowling Green community connecting generations to their history and their landscape.

A Brief History

Early Peoples



Archaic Period painting. Courtesy of Martin Pate. www.cr.nps.gov/seac/ancientmuses/CD/04_pate/

Artifacts left here are evidence that native peoples found shelter from the summer heat and winter chill and a source of water in the “barrens” landscape. The earliest of these visitors were Paleoindian nomadic hunters who may have cooked their game in the shelter of the cave. Later Archaic Indian fishermen, hunters and gatherers may have ground acorns here from nearby oaks. In the two millennia prior to European colonization, Woodland and Mississippian mound builders, potters and gardeners made this a home.

One can only wonder what spiritual connotations these early peoples ascribed to this valley. This was a place of swirling blue holes and a rushing river which emerged from the earth then disappeared into the cave, as though by magic.



Settlers in covered wagons. William H. Sadler, Inc. www.cyberfaith.com/examining/roots10.html

European Settlers

Even before nationhood, colonists poured through the Cumberland Gap in search of good land for farming and water power for mills. The Barrens surrounding the cave offered ideal farmland and the Lost River a source of power. Although accounts differ, the first wool carding and grist mill was reportedly built in the late 1700s, directly in the river under the roof of the cave. This mill operated until it was destroyed by fire or flood shortly before the Civil War.

Civil War Soldiers

Diaries and cave smoke writings are tangible connections to the thousands of CSA and USA troops who camped at the cave on their way to battle in the Western Theater. The cave and river offered a respite from dusty marches and apprehensions about what lay ahead.



Civil War reenactors at Lost River Cave. 2005.
www.lostrivercave.com/special_events.php

Cave Mill

John L. Row built a new grist mill and distillery above the cave in 1874, boring through the thick covering of the cave. A dam was built at the cave's mouth. The mill operated until a fire destroyed it in 1915.



1874 Mill and Cave Valley. Courtesy of Fred Thrasher.

Lost River Cave

In 1933, E. L. and W. F. Perkins renovated the cave mill dam, installed a hydroelectric generator, constructed a dance hall and opened the cave for business. Tourist cabins and a filling station/museum already existed on the rim along the Dixie Highway (Nashville Road) which crossed over the cave entrance. Promotion of the many “legends of Lost River” made this the most popular tourist attraction in the city. The dance hall, cooled by nature, became a favorite spot for Saturday night dances and community gatherings. As air-conditioned facilities became available and Interstate Highways bypassed the city, the night club closed in the late 1950s. Soon it became the “Forgotten River Cave”.



Underground Nite Club in the 1950s. Courtesy of McDaniel Studio.



Lost River Cave now being used as outdoor lab

By TRACY McQUEEN
Daily News Staff Writer

Lost River Cave to be open again for walking tours

By STAN REAGAN
Daily News Staff Writer

Lost River Cave Reborn

An archeological excavation in the early 1970s uncovered artifacts from early Indian cultures and the Civil War. These finds stimulated a drive to purchase the cave and valley for a state park. Although this early movement failed, key leaders took up the challenge to save the site. Dr. Nicholas Crawford of Western Kentucky University (WKU) conducted extensive hydrological studies of the drainage basin in the early 1980s. He and his wife Whit Crawford led a cleanup effort, held fund-raisers, and started opening the cave for public viewing.

Dr. Raymond Cravens and Mr. Owen Lawson purchased the valley and bluff in the 1970s. In 1985, they gifted 23 acres to WKU, which included the cave and original tourist site. In 1990 the Friends of Lost River was incorporated and leased the property from WKU with the promise to protect and develop it. They succeeded in listing the site on the National Register of Historic Sites. Over the past sixteen years, the Friends spearheaded development and promotion of tourist facilities and programs, and land acquisition. The Lost River Cave is once again a thriving tourist attraction and community resource.



Lost River Cave Boat Tour. May, 2006.

Lost River Cave and Valley Mission

The written mission of the Lost River Cave and Valley is:

To restore, preserve, protect, and promote the Lost River Cave and Valley as an historical, geological, cultural, and educational site.

Success in achieving this mission can be seen in the increase in visitation from 1,500 in 1998 to 70,184 in 2005. It can also be seen in the acquisition of key properties in the valley and ridge-top, with a total of 68 acres now under the protection and management of the Friends.

Since 1990, new visitor facilities have been added that greatly enhance the programming and visitor services. This includes the conversion of the old Perkins house into a visitor center and offices. A “tree-top” bridge provides easier access to the cave. New toilet facilities at the cave answer a basic need. A seasonal butterfly house adds value to the experience for summer visitors.

Partnerships have been developed with the city of Bowling Green, Warren County and Western Kentucky University that enhance the ability of the Friends to achieve this mission. An example of this cooperation is the development of a greenway through the property that connects to city parks.



Lost River Cave Tour. May, 2006.

The Need for this Plan



Lost River Cave Boat Tour. March, 2006.

In 2006, Lost River Cave and Valley is rapidly approaching its carrying capacity for visitors. In order to accommodate more people and provide an optimal value for the fees they pay, better facilities and interpretive media are needed. The development of a visitor center is deemed necessary to “solidify LRC&V’s importance in the community, meet the demands of the visiting public and provide a research and education facility” (Rho Lansden report to key stakeholders, Fall, 2005).

The addition of more lands in the valley and ridge top presents enormous potential for future development. These lands are natural geological and biological assets for preservation of native species, research by interested WKU faculty, natural heritage education for school children and the community, and recreation for all who visit.

The new land also poses some complex management challenges. Exotic vegetation dominates and chokes out the desirable native species. Restoration of native ridge top barrens and valley forest vegetation will require a long-term commitment of time and money. Storm water run-off from the Nashville Road must be managed so it does not compromise the quality and quantity of water in the Lost River. A long-range plan based on clear policies is needed for trail and recreational development.

Recognizing the benefits of assistance from professional interpretive planners, the Friends of Lost River Cave and Valley entered into a contractual agreement with Schmeckle Reserve Interpreters to develop an interpretive master plan. This document examines the “Why, Who and What” as the foundation for a comprehensive visitor services and site management plan.



Red cedar in the barrens habitat owned by Lost River Cave and Valley. March, 2006.

The Planning Process

The National Park Service Interpretive Development program defines interpretation as “facilitating a connection between the meanings of the resource and the interests of the visitor.”

Schmeckle Reserve Interpreters believes **planning is a process of consensus development**—of achieving a shared perspective by all stakeholders of why interpretation is needed, who it will serve, and what significant stories it will tell. Effective planning answers the following questions:

Why?

Establish the vision and goals of the Lost River Cave and Valley for developing an interpretive master plan.

- Chapter 1—Introduction
- Chapter 2—Vision for Program and Facility Development

Who?

Determine who the visitors are (or will be) and the experiences they are (or will potentially be) seeking.

- Chapter 3—The Audience

What?

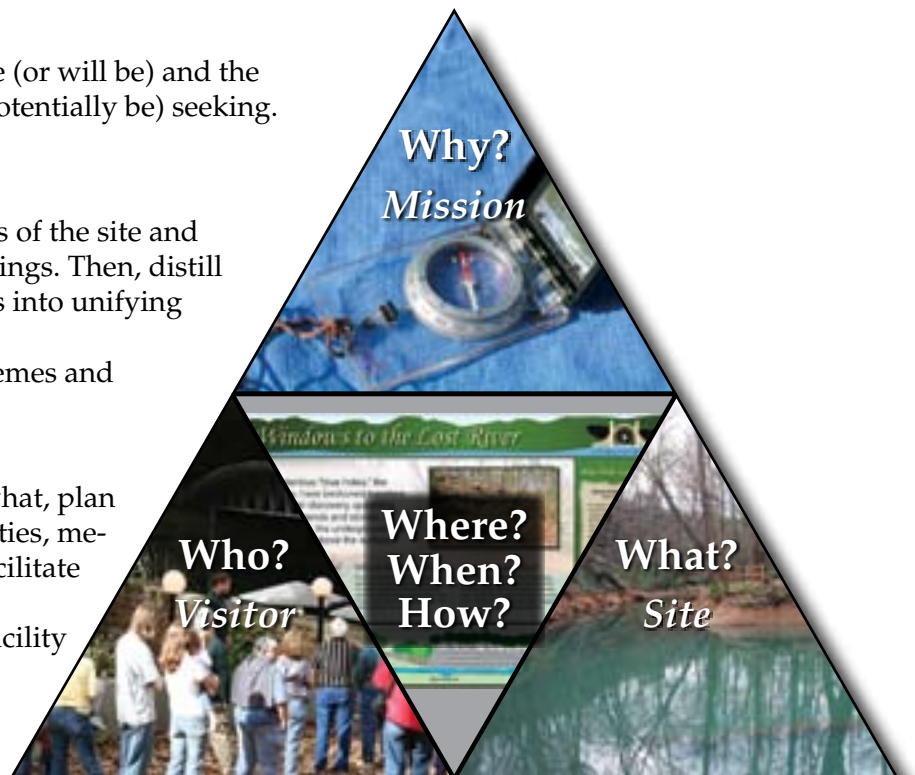
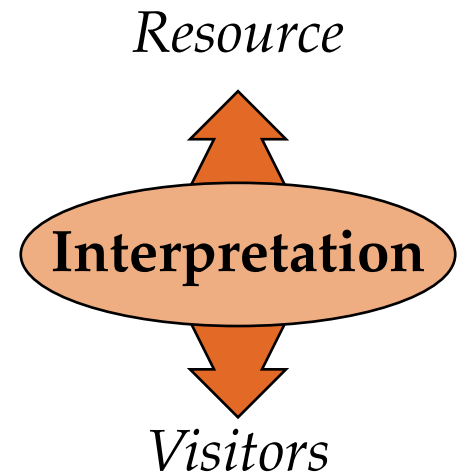
Examine the tangible resources of the site and describe their intangible meanings. Then, distill these tangibles and intangibles into unifying themes and messages.

- Chapter 4—Resources, Themes and Messages

Where? When? How?

Based on the why, who, and what, plan and develop interpretive facilities, media, and programs that best facilitate visitor/resource connections.

- Chapter 5—Interpretive Facility and Site Development
- Chapter 6—Interpretive Media and Experiences





Chapter 2—

Vision for Program and Facility Development



The first step in the planning process was to determine the vision of the key stakeholders for this plan. Two visioning techniques were used by the planning team: a nominal group meeting with the Friends of LRC&V, and interviews with staff and community leaders probing their views as to the desired outcomes. Descriptions of these techniques are provided in the methods section. Results are offered in the summary section for Chapters 2-6. Complete data for the nominal group meeting is provided in Appendix 1.

Methods for Vision Assessment

Nominal Group Process

It is a fair and equal process which results in increased ownership of ideas and consensus.

1. "Driving questions" are distributed in advance.
2. The facilitator poses a question and asks each member of the group to provide a single response.
3. Each response is recorded on flip charts. No response may be judged or criticized. Rounds continue until all pass.
4. Responses are categorized and like-items combined. Each set of responses is weighted by group members who each apply 20 sticker dot "votes" indicating which ideas they consider most important (with a limit of 5 votes for any one item).

Nominal Group Process: Vision and Parameters for Interpretive and Site Development

On March 31, 2006, a nominal group process was conducted by Schmeckle Reserve Interpreters with members of the Friends of LRC&V Board of Directors and key community leaders to achieve a consensus on the vision and parameters for interpretive and site development at Lost River Cave. This session furnished insights into the intensity of feelings that participants held regarding directions that the organization should be taking. It assisted the planners in discerning values held by stakeholders and helped to identify the parameters of development to be proposed in this plan.

Twenty-one individuals participated in the process. A complete list of participants is included in Appendix 1.

Five "Driving Questions" were presented to the group:

Driving Question 1: A clear idea of where you want to go: The written mission of Lost River Cave & Valley

is “To restore, preserve, protect, and promote the Lost River Cave & Valley as an historical, geologic, cultural, and educational site.” In your opinion, what are the most important goals of the Lost River Cave & Valley?

The results for this question are reported in this chapter, Vision for Program and Facility Development.

Driving Question 2: Audience—present and potential visitors: Who are the target audiences and potential audiences of Lost River Cave & Valley?

The results for this question are reported in Chapter 3—The Audience.

Driving Question 3: Stories—themes create a framework for developing effective interpretation: What are the important stories to be told at the Lost River Cave & Valley?

The results for this question are reported in Chapter 4—Themes and Messages.

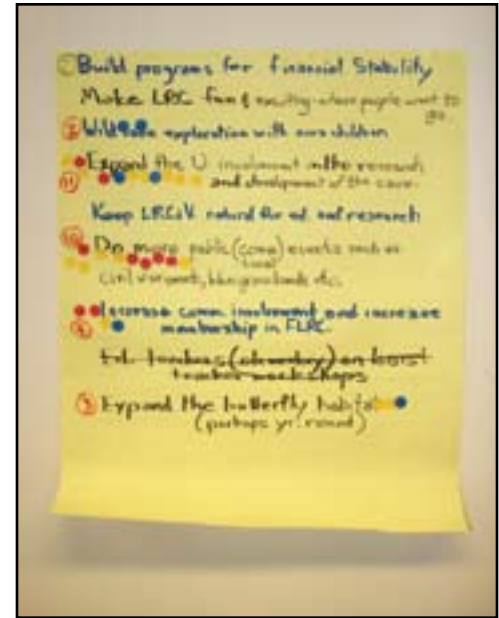
Driving Question 4: Site development: What future outdoor site developments would enhance the cave, bluff, and valley?

The results for this question are reported in Chapter 5—Site Development.

Driving Question 5: Facility development: What buildings should be developed or redeveloped at the Lost River Cave & Valley? What should be included in each facility?

The results for these questions are reported in Chapter 6—Facility Development.

The complete nominal group data is reported in Appendix 1.



Responses from the nominal group process were recorded and categorized. Participants voted on the most important items with circle stickers. March 31, 2006.



Interviewing staff inside the cave. May, 2006.

Interviews with Key Stakeholders: Vision for LRC&V Programs and Facilities

To confirm desired outcomes of this planning process, Schmeckle Reserve Interpreters conducted interviews with 17 stakeholders. This included 6 past and present board members, 5 community resource people with an interest or past connections to the site, and 6 staff members with leadership roles.

Goals of the Lost River Cave and Valley

The following goals are presented in order of importance based on the weighting provided in the nominal group process and follow-up interviews with key stakeholders. Following each goal statement are lists of activities that were recommended by the stakeholders for the achievement of that goal.

Goal 1:

Preserve and protect the cave, river, blue holes, ridge-top and valley for future generations.

- Remove exotic vegetation from the valley and encourage the re-establishment of native trees, shrubs and wildflowers.
- Re-establish native barrens vegetation on the land between Dishman Lane and the valley.
- Create wetlands to absorb runoff from the Nashville Road expansion.
- Limit access to the valley from the bridge to the cave entrance.
- Monitor the construction of the surrounding land area in order to minimize threats to the site.
- Maintain the valley for beauty, solitude and serenity.



Removing the thick undergrowth of exotic vegetation from the valley will enhance the health and aesthetics of the habitat. May, 2006.

Goal 2:

Provide educational facilities and exhibits that interpret the cultural and natural history of the region.

- Research and interpret the natural history of wetlands, barrens, forests, and the Karst/sinkhole landscape.
- Research and interpret the Civil War history of the site.
- Research and interpret the milling history of the site.
- Research and interpret the tourist and dance hall history of the site.
- Research and interpret the prehistoric Native American cultures which inhabited the site.

Goal 3:

Provide educational opportunities that increase participation of schools and youth groups in the region.

- Develop curriculum materials for field trips to LRC&V that relate to the Kentucky education standards in the topic areas listed in Goal 2.
- Develop Internet resources that offer teachers pre and post field trip activities that enhance the learning experience.
- Develop Internet resources that target children.
- Develop “teaching trunks” that contain topic-specific artifacts and activities for the schools.
- Offer wild cave exploration for children.



A unified system of signs, exhibits, and facilities will connect visitors to the multifaceted stories of Lost River Cave and Valley. November, 2005.



The Mammoth Cave National Park Environmental Education program provides curriculum guides and lesson plans for teachers. The materials are available online. Similar tools at Lost River Cave would enhance the learning experience for students and teachers.

www.nps.gov/archive/maca/learnhome/curricula.htm

Goal 4:

Make the LRC&V financially independent and self-sufficient with debt limited to a reasonable payback plan.

- Obtain development grants targeted to specific site and program needs.
- Maintain tourism at optimal levels.
- Seek community support through memberships, donations and special events.

Goal 5:

Enhance the LRC&V as a tourist attraction.

- Rebuild the Cave Mill as a working educational exhibit.
- Expand/extend the boat tours.
- Provide an expanded shopping area with unique items for souvenirs.
- Expand the butterfly habitat, perhaps as a year-round facility.

Goal 6:

Expand the educational efforts with the Bowling Green community.

- Promote understanding and appreciation of the significance of LRC&V.
- Encourage membership and involvement of local residents (this is a key to long-term protection).
- Emphasize “karst” as the landscape we live on and that water quality is dependent on surface activities.
- Do more public events such as Civil War events, dances, bluegrass bands, etc.
- Establish strong inter-generational ties to the cave and valley through proms, weddings, and family reunions.

Goal 7:

Expand Western Kentucky University involvement in the research and development of the cave.

- Offer internships and project opportunities for WKU students.
- Provide facilities that facilitate faculty and staff research and use of LRC&V as an educational resource.
- Solicit participation from key life science, earth science and social science faculty and students in the research and course use of the site.
- Solicit participation from education and recreation faculty and students in the provision of educational and recreational services for visitors.



WKU students try out their boat constructed of concrete in the Lost River. May, 2006.



Chapter 3—

The Audience



Lost River Cave tour at the Blue Hole. November, 2005.



Visitors were surveyed on-site before and after their cave tour experience. March, 2006.

This chapter examines information both quantitative and qualitative regarding the many target audiences that LRC&V serves. This data provides insights that guide the development of facilities, media and programs to assure that they are targeted to the needs of the audiences they serve. An examination of current marketing strategies is included as well as recommendations for other ways to market the LRC&V experience.

Sources of Audience Data

The market profile is based on six sources of data:


1. The March 31, 2006 nominal group responses to Driving Question 2: Who are the target audiences and potential audiences of Lost River Cave & Valley? (Complete data in Appendix 1)
2. Interviews with LRC&V staff and stakeholders.
3. Visitor data collected from ticket sales at LRC&V.
4. Visitor surveys conducted by the consultants. This included both pre-cave tour and post-cave tour surveys (complete results in Appendix 2).
5. Selected regional tourism data from the Kentucky Heartland Tourism Master Plan and the Kentucky Tourism Tracker (KY Department of Tourism).
6. Warren County census data.

Target Audiences

The following target audiences are or will be served by the site, programs and facilities of LRC&V. They are organized into four major audience categories. Narrative descriptions of unique or specific needs are provided for each category.

I. Tourists

- A. Out of state/regional/International
 - 1. Traveling through on I-65/ seniors (snow birds)/family vacation/spring break
 - 2. Bus tours
 - 3. "Cavers" from Europe
 - 4. "Cavers" from the U.S. visiting other regional caves
 - 5. Business travelers to Bowling Green (interstate/international)
 - 6. Convention visitors
 - 7. Visitors to other attractions (Corvette Museum/Shaker Museum/Beach Bend Amusement Park/Garvin's RV Center/Harley Davidson motorcycle center)
 - 8. Civil War buffs/John Hunt Morgan tours
 - 9. Old mill buffs
 - 10. Nature enthusiasts attracted to butterfly house/barrens restoration/valley bird sanctuary
- B. Nearby/local
 - 1. Weekend/day trip family outings
 - 2. Day trip seniors
 - 3. Couples/singles from WKU on weekend outings
 - 4. Corporate sponsored tours/convention off-site tours
 - 5. Residents with visitors from out-of-town
 - 6. New residents tours



II. Schools and Youth Groups

- A. School groups
 - 1. Primary
 - 2. Intermediate
 - 3. Secondary
- B. Teachers (training/in-service)
- C. Youth groups and after school groups (scouts/church/4-H)

III. Community

- A. Locals with memories of night club/
exploring cave
- B. Social events at LRC&V: weddings/
anniversaries/proms/birthdays/dance
nights/summer music events
- C. Corporate meetings
- D. Special events at LRC&V: Get Down in the
Valley/Civil War Reenactment
- E. Recreation at LRC&V: Greenway bikers/
valley hikers/birdwatchers and nature lovers

IV. Western Kentucky University

- A. Class field trips (geology/hydrology/
biology/history)
- B. Projects and research (faculty and students)
- C. Interns, volunteers and seasonal employees

Serving the Needs of Tourists

Tourist revenue is the primary source of income for LRC&V. Tourist dollars make it possible to employ a large, diverse staff and to develop quality facilities, media and programs. But, most important, tourist dollars make possible the primary mission to “restore, preserve, protect, and promote the Lost River Cave and Valley”.

Understanding the motivations and needs of this target audience is foundational to this plan. The following summary of the data will guide the development of media, facilities and services for this audience.

- The cave boat tour is the primary tourist attraction. It is unique to the Kentucky cave region and offers an alternative to the typical cave tour which requires visitors to climb stairs and squeeze through small spaces. Most visitors express satisfaction with the boat tour, especially multi-generational family groups.

However, a significant number of visitors (31% in our post-tour sample—those in back of the boat on large tours) could not hear the guide in the cave. Attempts to solve this problem have been made in the past, but not successfully. This is an issue that must be resolved.

A significant number of visitors (35% in our post-tour sample) would like a longer tour—to go deeper into the cave. Consideration should be given to either extending the navigable area of the cave or offering a combination boat/walking tour to deeper areas of the cave.

The boat tour is a “bottleneck” during peak tourist seasons. The current gem sluice and climbing wall are good diversions while people wait (and add revenue), but have little relationship to the primary



The boat tour is the main attraction at Lost River Cave. Many visitors had difficulty hearing the guide over the waterfall and would like a longer tour further back. November, 2005.



Visitors desire closer encounters with unique cave formations and animals. Flowstone, May, 2006.



The Lost River Valley is a nature enthusiast's dream, alive with flowing water, colorful flowers, and singing birds. May, 2006.

mission or themes of LRC&V. People waiting for their appointed time need other quality experiences to occupy them. This could include expanded interpretive media on-site and in the proposed visitor center as well as programs and facilities that capitalize on the experiences offered in the valley and ridge-top.

Some visitors expressed interest in seeing cave life and getting close to cave formations. Perhaps this could be provided in exhibits and media that offer a “surrogate” cave experience.

- A large segment of tourists are coming to LRC&V from other attractions in the Bowling Green area. This includes people in prized Corvettes, Harleys and Winnebagos. Easy access on hard surfaces is desired by this segment.
- Nature enthusiasts are a niche market with great growth potential that requires enhanced services. A significant segment of tourists expressed interest in nature related experiences. Enhancement of the valley trails, removal of exotic species and restoring the barrens on the ridge top will open up opportunities for nature interpretation and programming. Many bird lovers would like to see something offered regarding the designated “bird sanctuary”. Opportunities also exist to make the connection between natural and human history on the site. Some expressed disappointment that the butterfly house wasn’t open. Consideration should be given to a year-round facility that connects with the barrens butterfly habitat restoration.
- History enthusiasts are another niche market with growth potential. The experience for Civil War and old mill “buffs” can be enhanced with quality wayside and visitor center interpretive media. Additional special events and programs could be directed to these audiences. Consideration should be given to building a replica mill over the cave entrance. Consideration should also be given

to offering special tours of the Civil War smoke writings.

- A large percentage of visitors reported that they learned about LRC&V through an Internet search. The website could be expanded to include much of the media that will be developed in the future. Opportunities for learning prior to a trip greatly enhance the experience on-site. This will also aid in marketing the cave and valley as a quality experience.
- A wide diversity of people visit LRC&V. Parents with children in strollers and people with physical limitations are customers who expect a quality experience. All the main tourist attractions must be developed for universal accessibility.



The Lost River Cave and Valley website can be expanded to include educational and interpretive opportunities for visitors.

Marketing for Tourists

The dramatic increase in visitation at LRC&V over the past five years is evidence of the success of the current marketing efforts. Marketing activities include:

- Joint marketing with regional cave attractions.
- A quality brochure that is made available at rest stops, local motels and other local attractions.
- Signs on I-65 and the Natcher Parkway.
- Signs along Cave Mill Road and its feeder streets.
- Billboards.
- Television and newspaper coverage.
- A quality website.

The 65 pre-tour sample groups reported they learned about the cave as follows:

- 32% saw it in a brochure. These were acquired at motels, rest stops and other attractions.
- 28% heard about it from family, friends (word of mouth).
- 18% found the website (many printed out the map and other information).
- 5% saw a TV special, read a magazine article or saw a billboard.
- 17% other/not reported.



The majority of visitors learned about the Lost River Cave through brochures placed at hotels, restaurants, and other regional venues.

Marketing the LRC&V Experience

Marketing is more than advertising or promotion. It is the act of providing a quality experience on which people are willing to invest time, effort and money—and tell others about it. Joseph Pine and James Gilmore, authors of *The Experience Economy*, assert that “The experience is the marketing. If you want an experience to market your offerings, it needs to be a great experience: engaging, compelling and memorable.”

Certainly the expectation is set at LRC&V that a worthwhile experience is offered. In the post-tour surveys, most visitors agree that it was (it was rare for someone to complain that they didn’t get their money’s worth). When asked about their favorite experiences, 38% said it was the boat tour, 48% described the folklore and history as favorite parts of the tour.

The development of a new visitor center with engaging media and gift shop and the development of the valley, cave and bluff should elevate the visitor experience to one that is “engaging, compelling and memorable.” These developments must enhance the cave **experience**, the Civil War **experience**, the milling **experience**, and the nature **experience**.

Pine and Gilmore offer eight “Keys to Staging Experiences” that should guide planning at LRC&V:

- Create a rich portfolio of experiences, a series of related experiences that flow one from another.
- Use experience hubs in locations where people naturally congregate.
- Create a flagship location, a singular place where you stage the very best, most dynamic experience.
- Theme the experience. The theme must drive all the design elements and staged events of the experience toward a unified story line that wholly captivates the customer.

- Harmonize impressions with positive cues. Render the experience with indelible impressions. Impressions are the “takeaways” of the experience; they fulfill the theme.
- Eliminate negative cues. Ensure the integrity of the customer experience by eliminating anything that diminishes, contradicts, or distracts from the theme.
- Mix in memorabilia. Certain goods have always been purchased primarily for the memories they convey, as physical reminders of the experience.
- Engage the five senses. The more senses engaged in an experience, the more effective and memorable it will be.



The most powerful experiences are first-hand, sensory, and thematic. Marketing should promote the unique experiences visitors will have at the Lost River Cave and Valley. Looking at cave writings, May, 2006.

Serving the Needs of Schools



A school group arrives at Lost River Cave and Valley. May, 2006.

The visioning process identified schools as a critical target audience:

Goal 3: Provide educational opportunities that increase participation of schools and youth groups in the region.

The following activities were identified in interviews as ways to achieve this goal:

- Develop curriculum materials for field trips to LRC&V that relate to the Kentucky Education Reform Act standards (KERA standards) in the topic areas listed in Goal 2.
- Develop Internet resources that offer teachers pre- and post-field trip activities that enhance the learning experience.
- Develop Internet resources that target children.
- Develop “teaching trunks” that contain topic-specific artifacts and activities for the schools.
- Offer wild cave exploration for children.

Sylvia Risher, store manager and school program coordinator at LRC&V provided insight into the needs for the school and youth program:

1. Mammoth Cave offers a curriculum based on the KERA Standards. “It would be great to model the LRC&V curriculum package after Mammoth Cave”. There isn’t anything presently geared to specific grade levels. The curriculum should be grade specific. There is a need to do hands-on science and social studies that integrates the LRC&V themes and the KERA Standards.
2. Teacher training would be needed to help teachers integrate the experience into their classrooms. Since the staff at LRC&V is not trained as teachers, they will need training on the curriculum offerings.



Mammoth Cave offers curriculum that is based on Kentucky Education Reform Act standards. As travel budgets shrink, it is essential to show how the Lost River Cave experience fits into the educational process of area schools.

Perhaps staff and teacher training is a good way to connect with the WKU education program.

3. Sylvia is currently working on online resources for teachers. This would be much less costly than a mail-out package. The web administrator could set up a template that the staff would edit. “However, I would love to have a teaching trunk to send out prior to a class visit”.
4. School groups are currently offered the same tours as visitors. No alternatives are available if the cave is closed due to flooding. This should be addressed with future facility development.
5. “Day camps for youth would be desirable. Also BSA and GSA patch leadership. A ‘science night for families’ would be a good offering. School children could invite two people and get points toward their grades”.

Marketing to Schools and Youth

The Lost River Cave & Valley Visitation Statistics show that 3,724 school children were served with cave tours in 2005. Most come from within an hour’s drive of Bowling Green. The majority of classes come in the spring and they want to be at LRC&V only in the morning.

With better curriculum offerings and facilities, teachers should be more willing to bring their classes in all seasons and stay for the entire school day. This has great potential during the typically slow fall and winter months.

If special youth programs are developed these could be easily marketed to families and youth leaders. Special winter (Jan./Feb.) programs would be desirable, since this is the time with lowest visitation.



Children search for “gems” in the water sluice as they wait for a cave tour. April, 2006.

Serving the Community



Special events like Civil War Reenactments and “Get Down in the Valley” encourage repeat visitation by Bowling Green residents. Additional events like guided nature walks, candlelight hikes, or Halloween tours would attract more residents and add to the diversity of the site. www.lostrivercave.com/special_events.php

The visioning process identified the Bowling Green community as a critical target audience:

Goal 6: Expand the educational efforts with the Bowling Green community.

The following activities were identified in the nominal group process as ways to achieve this goal:

- Promote understanding and appreciation of the significance of LRC&V.
- Encourage membership and involvement of local residents (this is a key to long-term protection).
- Emphasize Karst as the landscape we live on and that water quality is dependent on surface activities.
- Do more public events such as Civil War events, dances, bluegrass bands, etc.
- Establish strong inter-generational ties to the cave and valley through proms, weddings and family reunions.

Each specific community target market requires special attention for programs and services. As with tourists, the “experience is the marketing.” Quality offerings will sell themselves through word of mouth.

Community Target Markets

A. **Local residents** with memories of night club/ exploring cave

An archive of oral histories and photographs is currently available. This should be expanded upon as opportunities arise. These can be used in a variety of media to connect to older residents.

The interpretive media should tie the cave and valley into a greater story that has significance in the lives of the citizens of the community. The settlement of the region, the once vibrant Dixie

Highway that ran above the cave, Civil War soldiers camping here, and the famous musicians that played here all show the significance of the cave and valley to the community.

B. Social events at LRC&V: weddings/ anniversaries/proms/birthdays/dance nights/ summer music events

These events continue the ties to LRC&V. New facilities will stimulate greater participation by this market.

C. Corporate meetings

New facilities will provide an attractive venue for this market.

D. Special events at LRC&V: Get Down in the Valley/Civil War Reenactment

Festivals and special events can become traditions that enhance the community “sense of place”.

E. Recreation at LRC&V: Greenway bikers/valley hikers/birdwatchers and nature lovers

Nature-related organizations could be given special access to the valley and barrens restoration. The “price of admission” might be volunteer weekends on restoration projects. Their involvement will lead to pride and “ownership,” ensuring their future support.

Making the valley and ridge top available to families will offer valuable educational and recreational opportunities for this most important community segment. Family memberships might be the condition for admission.

Special programming should be offered for these groups as an additional reward for their support. LRC&V would serve as the only nature center available in Bowling Green.



High school students prepare for prom held on the dance floor in Lost River Cave. May, 2006.

Serving Western Kentucky University



Schmeeckle Reserve is a natural area owned by the University of Wisconsin-Stevens Point. During the 2005-2006 academic year, over 1,500 students attended courses and conducted research in the Reserve. Nearly 50 students are hired annually on the Work Study program to maintain trails, construct signs, greet visitors, and sell merchandise in the gift shop.



A strong partnership between

Lost River Cave and Valley and Western Kentucky University could result in an enhanced understanding of the site, increased educational opportunities for students, a consistent source of staff, and the ability to complete projects outside the workload of current staff.

The visioning process identified Western Kentucky University as a critical target audience:

Goal 7: Expand Western Kentucky University involvement in the research and development of the cave.

The following activities were identified as ways to achieve this goal:

- Offer internships and project opportunities for WKU students.
- Provide facilities that facilitate faculty and staff research and use of LRC&V as an educational resource.
- Solicit participation from key life science, earth science and social science faculty and students in the research and course use of the site.
- Solicit participation from education and recreation faculty and students in the provision of educational and recreational services for visitors.

New facilities should prove attractive to this target market. They, in turn, can enrich the program offerings of LRC&V. It is important that WKU faculty see this as a reciprocal bargain where they give to LRC&V and get something of value for their classes and students.

Schmeckle Reserve serves as an outdoor laboratory for the College of Natural Resources and Biology Department at the University of Wisconsin-Stevens Point. Students gain experience in numerous land management and programming activities. These real-life field experiences are invaluable for future resource managers. Lost River Cave and Valley could implement similar programs.



Creating oak savannah openings to enhance native habitat.



Prescribed burning prairie and savannah areas to limit woody growth.



Manually and chemically controlling exotic species like buckthorn.



Presenting educational public programs on natural and cultural history topics.



Patrolling trails for rule violations.



Participating in wildlife research studies, like tracking radio collared deer to determine population and movement.



Chapter 4—

Resources, Themes, and Messages



Blind cave crayfish in Lost River Cave. May, 2006.

Heritage interpretation is a communication process that guides visitors to discover meaning in objects, places and landscapes (Signs, Trails and Wayside Exhibits, 3rd edition, by Gross, Zimmerman and Buchholz).

This chapter details the themes and messages that help place resources and events into meaningful contexts for visitors. As described in Chapter 3, “the theme drives all the design elements and staged events of the experience toward a unified story line that wholly captivates the customer.” Sub-themes and messages are the facts, concepts, ideas and values that amplify the theme.



Kentucky Caverns (*above left*) and Diamond Caverns are renowned for their numerous formations. Mammoth Cave (*above right*) is known for its immense room sizes.

Lost River Cave holds a unique niche in Kentucky Cave Country. In most caves, the water which carved the caverns long ago drained to lower channels in the limestone. The Lost River Cave, however, is still actively being carved by water. It is a young, active, living cave accessible only by the river itself. This unique niche should continue to be marketed to visitors.

Relationship to Other Kentucky Cave Attractions

Lost River Cave benefits greatly from its proximity with other cave attractions in the karst region. The critical number of cave attractions generates a niche market found nowhere else. Many tourists who visit Mammoth Cave National Park also seek other cave experiences in the region. Since they seek a diversity of cave experiences, the underground boat tour is an especially appealing variation. Visitors surveyed on site informed us that the photograph of the Lost River Cave boat tour on the cover of the brochure was a factor in their choice of visiting here.

Membership in the National Caves Association helps LRC&V to market to a wide potential audience of cave enthusiasts. Wide dissemination in motels, restaurants, and other tourist sites results in spontaneous visitations. Well placed department of transportation highway signs on Interstate 65 also contribute to travelers last minute decisions to visit.

Many of the show caves in Kentucky share Lost River’s problem of reaching carrying capacity during peak tourist seasons. It is perhaps instructive that some, like Kentucky Down Under, have chosen to diversify their activities to attract visitors who participate in other experiences.

Tangible Site Resources

LRC&V has on its 68 acres a rich assemblage of natural and cultural resources that serve as tangible connections to the natural and cultural history of the community and Kentucky as a whole:

I. Natural Resources

- A. Lost River Cave
 1. Unique cave fauna
 2. Blue holes and “the shortest, deepest river” (Ripley)
 3. Limestone cave structures
- B. Collapsed cave valley
 1. Forests with flora and fauna typical of Kentucky
 2. Bird sanctuary
 3. Butterfly house
- C. Ridge-top
 1. Karst sinkhole landscape
 2. Potential for restored barrens flora
 3. Weather station
 4. Potential wetlands system

II. Cultural Resources

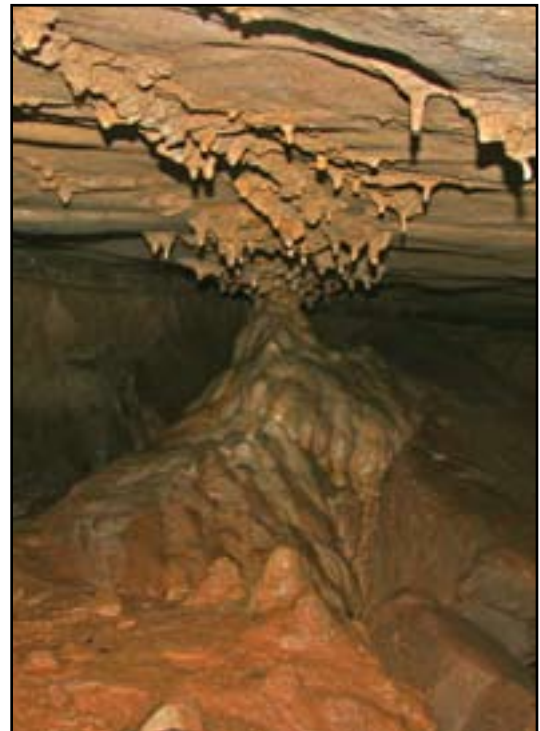
- A. Early Indian artifacts
- B. Early milling artifacts, dam and photos
- C. Civil War
 1. Smoke writings
 2. Photographs and diaries
 3. Artifacts
- D. Dixie Highway
 1. Photographs of old service station and museum
 2. Tourist cabin

E. Night Club

1. Old stairways and the dance floor
2. Photographs and oral histories

F. Quarries

1. Powder houses
2. Discarded equipment
3. Photographs
4. Filled-in quarry sites



Column and flowstone formation inside Lost River Cave. May, 2006.

Intangible Meanings

The significance of Lost River Cave and Valley to the visitor and community lies within the meanings people associate with the site. People value and visit this resource more for what it means than for its physical attributes. The following is a partial listing of those meanings:

- LRC&V promises adventure and discovery with the only cave boat tour in Kentucky.
- LRC&V offers an out-of-the-ordinary sensory experience (cool, quiet, dark, musty).
- The cave is a timeless, intimate space, little changed since the beginnings of human history.
- The Lost River is mysterious—disappearing and reappearing in the blue holes and cave.
- There are legends and accounts of people and horses disappearing in the river.
- The cool cave and river offers refreshment from summer heat and winter cold.
- The cave is home to strange animals unique to the underground world.
- Poems and songs are expressions of romantic connections to LRC&V—liaisons between lovers, nostalgia for the proms, dances and weddings of youth.
- LRC&V still offers festivals of life and gatherings: Weddings, proms, family reunions, Civil War reenactments, music events, civic meetings.
- According to local legend the cave was a hideout for Jessie James' gang and Morgan's raiders.
- The valley is a tree-shaded sanctuary for people and wildlife.
- The exposed "shortest, deepest" river and the many sinkholes hint at the extensive cave and river system that is hidden under the city.
- The flowing river in an otherwise dry Karst landscape has attracted people for thousands of years as a source of drinking water.
- The use of the underground river to power a mill is unique.
- The Civil War smoke writings and diary entries allow us to make emotional connections to soldiers as they marched off to battle.

Themes and Messages

Themes are the unifying story lines that tie all of the site resources together with their meanings. All interpretation and visitor experiences at the site should relate to these themes.

Primary Theme

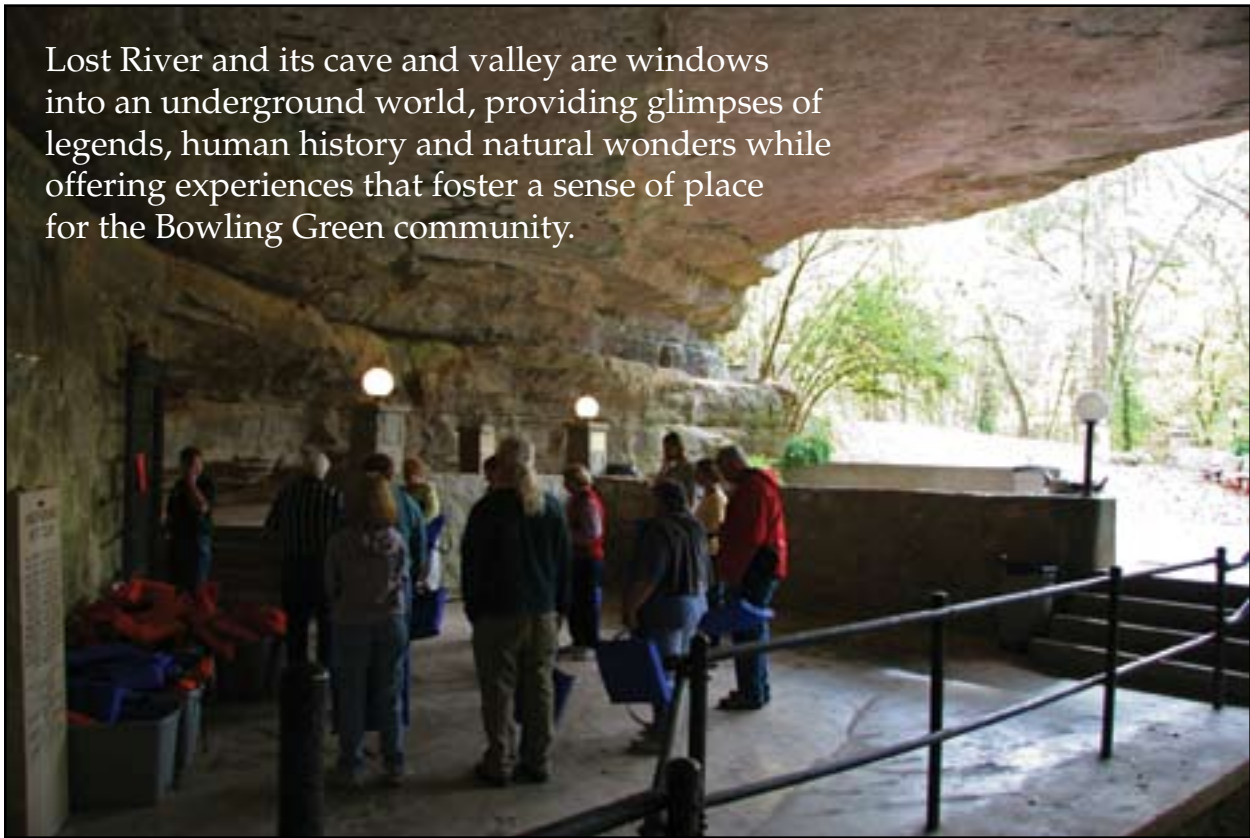
The **primary theme** represents the main idea to be communicated about the Lost River Cave and Valley. All interpretation on site should support and build this theme.

Themes are a synthesis of “Why? Who? and What?” They are the “big ideas” that organize the stories to be told through media and programs. They create a framework for message and media choices, and help place resources and events into a meaningful context for visitors.

A compelling interpretive theme:

- Is a single concise sentence.
- Links tangible resources to intangible meanings.
- Directs which stories to tell in programs and media.
- Is a planning tool, *not* a take-home message or sound bite.

Lost River and its cave and valley are windows into an underground world, providing glimpses of legends, human history and natural wonders while offering experiences that foster a sense of place for the Bowling Green community.



Lost River Cave tour. November, 2005.



Blue hole and karst topography, March, 2006.



Quarry operations in Warren County. Courtesy of the Kentucky Library, WKU.



Remnants of quarrying are still visible in Lost River Valley.

Sub-theme 1: Living in Karst Country

The sinkholes, collapsed cave valley, cave, river and blue holes are tangible evidence of the vast underground dissolved limestone drainage system that underlies Bowling Green and the region and shapes the lives of all who live on it.

Messages

- 1.1 Karst refers to a type of terrain where slightly acidic groundwater has dissolved carbonate bedrock (limestone and dolomite) over millions of years to form a subsurface drainage system. Karst country is cave country.
- 1.2 Rainwater quickly drains from the surface through sinkholes. Large rivers like the Barren River are mostly spring fed from underground streams like Lost River.
- 1.3 The Lost River valley is a collapsed cave with a series of blue holes where the Lost River is exposed at the surface.
- 1.4 Karst groundwater provides drinking water, springs to feed our waterways and habitat for many unusual underground species.
- 1.5 Groundwater in karst is easily contaminated and requires diligence by all residents to prevent pollution. The quality of the groundwater is dependent upon how we use the land and protect the water entering the ground.
- 1.6 Constructing roads and buildings in karst presents engineering challenges because of the potential for collapse.
- 1.7 Dripping water creates diverse cave calcite formations.
- 1.8 Limestone was quarried from several sites in Warren County, including the Lost River Valley. The stone was used as facades for buildings, monument bases, and curbing. Remnants of the valley quarries include an old boiler, powder houses, and the quarry sites.



Cave salamanders in Lost River Cave. May, 2006.

Sub-theme 2: Cave Critters

Lost River Cave hosts a variety of animals ranging from those which only visit to those which are true dwellers of the underworld.

Messages

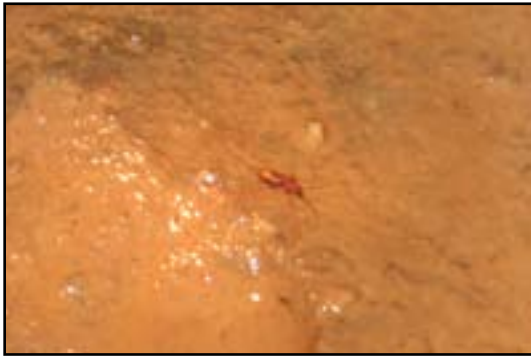
- 2.1 Near the entrance, Troglözenes (cave guests) such as mice, snakes and birds come and go, using the cave as temporary shelter.
- 2.2 The twilight zone, and even the dark zone is inhabited by Troglóphiles (cave lovers) such as the cave salamander, cave cricket, cave spiders and many kinds of bats which usually leave the cave in search of food, but return for shelter and security. Crickets and bats are especially important for delivering energy (droppings, carcasses) to the cave dwellers.
- 2.3 In the dark zone, Troglóbites (cave dwellers) live out their lives. Many, such as the cave beetle, blind crawfish and eyeless fish are completely adapted to a life in total darkness where food is extremely limited.
- 2.4 Currently there are approximately 874 species of troglóbites found in the caves of south-central Kentucky. Many of these species may be found in the Lost River Cave system.



Cave cricket in Lost River Cave. May, 2006.



Blind cave crayfish in Lost River Cave. May, 2006.



Cave beetle in Lost River Cave. May, 2006.

2.5 Cave life is very dependent on our world. We can help preserve cave critters by proper use and disposal of everything we consume.

2.6 Kentucky has 15 species of bats which can be found throughout most of the state. The endangered Indiana, gray, Rafinesque's big-eared and Virginia big-eared bats hibernate in caves. The more abundant little brown bat, Northern long-eared bat and Eastern pipistrelle also hibernate in caves.

2.7 Pipistrelle's are the most commonly seen cave bat in Lost River and other caves and prefer to roost singly in the dark zone.

2.8 Population declines of all species are the result of human disturbance of hibernating bats and alteration of air flow and temperatures in caves. Bats are vulnerable to extinction in part because they are the slowest reproducing mammals on earth, most producing only one young annually.



Pipistrelle bat in Lost River Cave. May, 2006.



Eyeless fish. Courtesy of the National Park Service-Digital Image Archives.
<http://photo.itc.nps.gov/storage/images/maca/maca-Thumb.00001.html>

Sub-theme 3: Life in the Valley and on the Ridge-Top

Lost River Cave and Valley has a cool, moist forest environment in the valley and a hot, dry grassland environment on the ridge-top, and both are typical of plant communities in the Pennyroyal Region of Kentucky that greeted European settlers of the late 18th century.

Messages

- 3.1 The Pennyroyal Plain (Mississippian Plateaus) is a nearly flat topographic feature formed on very thick Mississippian limestone beds where abundant water has created a myriad of sinks and caverns. This sinkhole plain extends from Tennessee to Indiana and is the largest in the U.S.
- 3.2 Early settlers dubbed this mostly treeless plain “the barrens” because they believed it to be poor farm land.
- 3.3 Louis Phillippe, the Duke of Orleans traveled through the area in 1796. He described the area as one with “only small, stunted trees, most of them oaks and hickories and everywhere lush grass dotted with flowers. These barrens struck us as exceedingly pleasant.”
- 3.4 This future king of France also described “some stands of tall timber along the banks of springs and other natural features” such as sinkholes.
- 3.5 Pioneer farmers soon discovered that the soil was deep and rich, not infertile. Within a generation most of the barrens was homesteaded and converted from prairie to farmland.
- 3.6 Most early nineteenth century pioneers lived in log cabins and grew tobacco, corn, vegetables and livestock. Surpluses grown on the fertile soil were freighted down river to profitable markets in New Orleans.



A restored native prairie/barrens habitat near Lost River Cave. May, 2006.



As depicted in these historic Kentucky farming postcards, the barrens were agriculturally rich. Courtesy of Lexington History Museum. www.lexingtonhistorymuseum.org/archives/postcards/



The Lost River Cave Valley, formed by a collapsed cave, supports a diverse array of animals and plant species. March, 2006.



With prairie plantings and periodic prescribed burns, the old field ridge top can be managed as a rich barrens habitat. May, 2006.



Butterfly house prior to opening for the season. May, 2006.

3.7 The LRC valley is a collapsed cave which creates a moist microclimate that supports a mixed hardwood-red cedar forest. Native spring ephemeral species are abundant on the forest floor on the slopes near the cave and around the blue holes. Human disturbance has introduced much exotic and invasive vegetation throughout the valley.

3.8 The valley is a designated bird sanctuary where a wide variety of resident and migratory bird species can be observed.

3.9 The LRC&V ridge top has old-field vegetation with broomsedge bluestem the predominant species. Native prairie plantings will restore parts of this area so that it is reminiscent of the pre-settlement barrens landscape.

3.10 The barrens were maintained as such by periodic burning. Native Americans used fire to encourage new growth that attracted game such as bison and to maintain the treeless landscape. Fire is still used today by managers to discourage exotic and woody competitors.

3.11 Less than 1% of the woodland savannas, grasslands and pre-settlement forests that covered Kentucky 200 years ago exist today.

3.12 At the time of settlement, grasslands occupied about 6-10% of Kentucky. This once extensive community type has been reduced to scattered sites in western and central Kentucky, and probably totals less than one square kilometer. They contain some of the state's rarest plants (*Plant Life of Kentucky*, Jones).

3.13 The LRC&V butterfly house displays native species that are found in the forest and prairie barrens of Kentucky.

Sub-theme 4: Prehistoric Indians

Pre-historic Indian cultures have lived at the Lost River and cave for thousands of years.

Messages

- 4.1 An archeological investigation of a ridge-top midden (refuse pile marking the site of a prehistoric settlement) in 1973 found two Dalton dart points.
- 4.2 Jack Schock of the WKU Anthropology Department who directed this study believes that these early cultures used the cave as a winter shelter and source of water.
- 4.3 These Dalton points were made by Indians who lived in Kentucky during the Archaic Indian Cultural Tradition between about 8,000 B.C. and 1,000 B.C. Archaic Indians were hunters and gatherers of food and had neither pottery nor domesticated crops. Spears and atlatls were used to hunt game. Large stone tools were used to cut trees, break open nuts and make dugout canoes.



American Indian during the Contact Period. Courtesy of The Kentucky-Uruguay Cultural Heritage Education Project. www.dinacyt.gub.uy/proykent/boone_i.htm

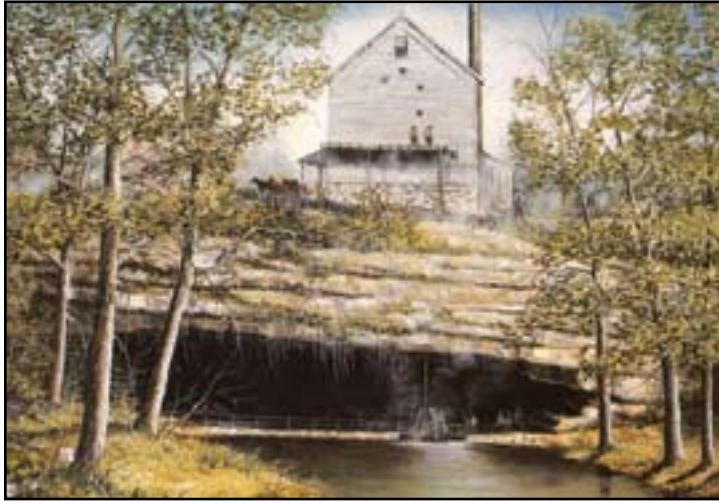


Late Archaic Projectile Points. Courtesy of The Kentucky-Uruguay Cultural Heritage Education Project. www.dinacyt.gub.uy/proykent/boone_i.htm



Jack M. Schock, instructor of sociology and anthropology at WKU holds two stone points dating to 7,500 B.C. discovered at Lost River Cave.
December 12, 1973.

- 4.4 A 1904 report on “The Old Cave Mill” in the Potter College for Young Ladies “Green and Gold” literary magazine states, “All sorts of Indian relics have been found in the cave and on the bluff... Indian arrow heads and long flat shaped rocks, with which they ground their corn.” These are descriptions of Woodland Indian artifacts.
- 4.5 The bow and arrow, pottery, cultivation of corn and other crops and mound building were characteristic of the Woodland Indian Cultural Tradition which began about 1,000 B.C. and the Mississippian Farming Cultures which early Spanish explorers found in the 1600s.
- 4.6 It is probable that big game hunters of the Paleoindian Cultural Tradition (+12,000 to 8,000 B.C.) also used this site. Mammoth Cave National Park has found the fluted spear points of these earliest peoples of Kentucky.
- 4.7 Archeologists divide Kentucky’s long indigenous past into five major periods of time: Paleoindian (+12,000 to 8,000 B.C.), Archaic Period (8,000 B.C. to 1,000 B.C.), Woodland Period (1,000 B.C. to 1,000 A.D.), Late Prehistoric Period/Mississippian (1,000 A.D. to European Contact) and Contact Period (1540-1795).



1874 Mill and Cave Valley. Courtesy of Fred Thrasher.

Sub-theme 5: The Cave Mills and the Louisville-Nashville Turnpike

The cave mills at Lost River Cave and the Louisville-Nashville Turnpike which passed over the cave are connections to 19th century commercial and agricultural development in Warren County and Kentucky.

Messages

- 5.1 There are many conflicting reports on the construction of the first mill at Lost River Cave. Some undocumented 20th century reports state that it was built in the 1792 as a corn mill, then saw mill. Other accounts place the construction of the “first flour mill in Warren County” much later. The mill is said to have been built by “James Rumsey Skiles, pioneer resident and capitalist” or by a “Mr. Shanks”. Another account claims a Mr. King built the first water mill in 1818 and it was replaced in 1823 by one built by S. Riles (could that be Skiles?). This account continues: “The second mill remained in operation until 1846 when the whole property went to waste.”

Few documented reports exist. The earliest was from William Blane, *An Excursion Through the United States and Canada, 1822-1823*:

Within three miles of Bowling Green is a mill situated in what the people term a sink hole. This is a remarkably large and deep cavity, into which a considerable stream precipitates itself, and disappears under ground. The road leading to Nashville passes close to it; and while proceeding on what you imagine to be nearly a level surface you find yourself suddenly upon the brink of a frightful precipice, from which you might jump down upon the roof of the mill below.

Henry Ruffner, *Notes of a Tour from Virginia to Tennessee, 1838* reports,

Near Bowling Green, the road passes directly over a mill in a cavern, out of which a stream flows and then enters another cavern a few yards distant.

Lewis Collins, *Historical Sketches of Kentucky, 1847* states:

About three miles south of Bowling Green, and on the turnpike to Nashville, is the Cave Mill, in level barrens. A creek breaks up from the ground, runs about two hundred yards, then disappears in the cave; and, after a course underground of a mile and a half, again appears, and runs into Barren River. Immediately under the roof of the cave, Mr. Shanks has a water grist mill and wool carding machine, with no covering but the rocky arch above. Directly over the mill, and within a few feet of the precipice, runs the turnpike over which thousands pass, many of them unconscious of the deep chasm beneath.

Thomas Kite, *Journal of Trip Through South Central Kentucky, 1847*:

Three miles from Bowling Green on the Nashville Road we visited Cave Mill...A solid arch of rock about 50 ft. in thickness forming the roof. Under this arch an enterprising Kentuckian has located his grist mill, and the noise of the falling water, and the clattering of the cog wheels by giving life and animation, increases the picturesque effects.

Colonel John Beatty of the Union army camped at Lost River on Nov. 9, 1862. He wrote in his diary, "The wreck of an old mill stands on the bank of the stream."

Conclusion: Without further documentation, the only factual claims that can be made are that the mill was in operation by 1823 and continued until at least 1847 when it was operated as a grist mill and wool carding machine by a Mr. Shanks. What is certain is that this mill was built directly in the stream under the rock arch of the cave entrance. Samuel Hibbs who camped here with the 8th Kansas Infantry in Sept., 1862, described the "water confined just above by a wall of masonry being built across with narrow gates or issues for the water to pass through." It has been described as "the only known cave mill in the nation". In 1862 it was described by Beatty as a "wreck" and by Hibbs as "torn down".

5.2 In 1874 or '75 (accounts differ), John L. Row built a stone dam in the stream near the cave entrance, drilled through the 42 foot arch over the cave, constructed a three-story high mill above the cave, and ran a shaft from the mill to an "undershot wheel" in the dam raceway. He operated this as a flour mill and distillery until 1889. His bill of sale stated as follows:

***Notice: Cave Mill For Sale.** On Saturday, July 20, 1889, at 8 o'clock p.m., on the premises, I will offer for sale to the highest bidder my large residence, 20 acres of land, mill and distillery, situated three miles south of Bowling Green, on the Bowling Green and Nashville pike. The flouring mill is first-class in every particular and will make four-barrels of as good flour as any mill in the county per hour, and is well located for a large share of custom work. The distillery is the best brandy distillery in the county and will make six barrels per day. A never-failing spring is on the premises which runs all of the machinery one-third of the year. I will also sell my interest in the old L. & N. turnpike. Terms made known on day of sale. Jno. L. Row*



Mill built in 1874 or 1875 by John L. Row. From *The Spirit of Lost River*.



A hole drilled through the roof of the cave once connected the waterwheel powered by the Lost River to the mill above. May, 2006

The mill was purchased by a James Skaggs. Others later owned and operated the mill. The last owner was Robert Crump who operated the mill until it was destroyed by fire in January, 1915.

5.3 In the earliest years of Kentucky, the Lost River (or “Hidden River” or “Cave Mill Creek” as it was called prior to the Civil War) was an important watering place and campsite on the Louisville and Nashville Trail.



Until about 1900, all improved roads in Kentucky were privately owned and maintained. Owners could collect tolls from travelers using the roads.

www.lexingtonhistorymuseum.org/archives/postcards/

5.4 The Turnpike, 1833 to 1900 “Recognizing the need for passable routes through the state, the Kentucky legislature authorized the construction of the Louisville and Nashville Turnpike in 1833 and established state regulated tollgates and tollhouses every fifth mile to collect tolls from travelers. The turnpike began in Louisville and extended south through Elizabethtown and Warren County to Nashville.” Until the “tollgate war” of 1896 to 1900, all improved roads in Kentucky were privately owned and operated. Around 1900 the Kentucky legislature transferred the management and maintenance of the toll roads to the counties which issued bonds to purchase them. (Sources: *Bowling Green-Warren County Roads*, WKU Library; news article, *Do You Remember When You Paid Tolls?* December 28, 1941.)

John Row owned the section of the turnpike that passed by his mill (the road actually curved around the mill).



Civil War soldiers at Camp Burnham in Bowling Green. From *Morgan's Command Organized* wayside exhibit.

Sub-theme 6: The Civil War and Lost River Cave

A reliable source of water, Lost River Cave was an important campsite for Confederate and Union soldiers who documented their time there with entries in diaries and “smoke writings” in the cave.

Messages

- 6.1 Elvin Smith describes Lost River as “The Great Civil War Oasis”. Officers would choose a campsite based on the availability of water for horses and men. Several Confederate and Union regiments camped at LRC&V for this reason and also because of its location on the Louisville-Nashville turnpike. Harper’s Weekly, January 25, 1862 described Bowling Green: “The whole of this country may be compared to bowls with a hole in the bottom...(which)...carry off the surplus water after rains into the caves or underground streams. By the natural supply of water 500 horsemen could not have found the means of subsisting themselves and horses in a body between Green and Barren rivers.”
- 6.2 Between September, 1861 and February, 1862, Confederate regiments camped at Lost River. Bowling Green was established as the Confederate capital of Kentucky and fortifications were built around the town to defend it. In February, 1862, in the face of overwhelming threat, CSA forces



Captain John Hunt Morgan and his men were stationed in Bowling Green, but no one knows for sure if they camped at Lost River Cave. From *Morgan's Command Organized* wayside exhibit.



Elvin Smith, a local historian, has made tremendous progress linking smoke-written names in the cave with actual Civil War soldiers stationed at the site. The photographs, diaries, and letters associated with the soldiers are powerful and meaningful connections to the tangible names left behind.



According to legend, Jesse James and his gang hid out in Lost River Cave after robbing the Southern Deposit Bank at Russellville.

abandoned the town and Union forces took over the fortifications and camps.

- 6.3 Between February, 1862 and January, 1863 Union troops from Ohio, Indiana, Kentucky, Kansas, Pennsylvania, Minnesota, and Illinois camped at Lost River en route to or returning from campaigns in Tennessee and beyond.
- 6.4 Journals, letters and memoirs by several Union officers and men describe their encampment at Lost River (as they called it). Some describe it as “one of the greatest curiosities” or a “singular freak of nature” and talk about exploring the cave.
- 6.5 Smoke writings in the cave have been linked to specific soldiers who camped at Lost River Cave.
- 6.6 Undocumented reports indicate that men and horses disappeared into the river.
- 6.7 According to “local tradition” a detachment of John Hunt Morgan under the command of Capt. Thomas Hinds allegedly hid in the cave from Federals who were attempting to capture him after he burned the depot at South Union in Feb.1863. This is unlikely since the Lost River campsite was occupied by Union forces.
- 6.8 Another “local tradition” is that the James/ Younger gang hid in the cave after robbing the Russellville bank in 1868. Jesse was in Adairville on the Tennessee border recovering from a lung wound he received at the end of the Civil War. It is likely that the gang, if they did the robbery, returned south to Adairville instead of north to Lost River. The James and Younger brothers were members of the notorious Quantrill Raiders and other murderous pro-Confederate gangs during the Civil War.



Stone entrance to Lost River Cave in the 1940s. The entrance still exists today.

Sub-theme 7: The Dixie Highway and Lost River Cave Night Club

In the 1920s and '30s, entrepreneurs developed Lost River Cave as a tourist attraction for travelers on The Dixie Highway and as a night club for Bowling Green citizens, and a new romantic era was born.

Messages

- 7.1 In 1915 The Dixie Highway Association was established under the leadership of Carl Fisher (backer of the earlier east-west Lincoln Highway and the Indianapolis Motor Speedway) with the mission to develop a highway to connect the Midwest and the South. The name was chosen to honor “Fifty Years of Peace” between North and South. Two routes were established, an eastern route from Miami to Sault Ste. Marie, MI and a western route from Miami to Chicago. The western route followed the Nashville-Louisville pike which



Carl Fisher led the development of the Dixie Highway to connect the Midwest and the South.



The Dixie Highway was marked with red and white stripes, often painted on telephone poles.



The Lost River walnut factory was operated by E.S. and W.L. Perkins starting in 1917.



This tourist cabin was one of 12 built in 1935, offering accommodations for travelers on the highway.

passed over Lost River Cave and through Bowling Green. By 1925 the Dixie Highway had 5,786 paved miles, much of which in the south had brick paving.

The route was marked by a red stripe with the letters "DH" on it, usually with a white stripe above and below. This was commonly painted on telephone and telegraph poles along the route. Soon tourist camps, cabins, roadside diners, roadside attractions and service stations were established to take advantage of this new motor tourism. Lost River Cave had all of these!

The Dixie Highway was privately funded and developed until the 1920s when federal assistance began. In 1925 and '26 the U.S. Highway System was laid out, and in 1927 The Dixie Highway Association was disbanded. The new federal system used numbers to replace the confusing array of highway names, and 31W replaced Dixie Highway between Bowling Green and Louisville.

- 7.2 The Bowling Green Times-Journal, September 10, 1921, reported that "through the instrumentality of the Chamber of Commerce, the Lost River Cave property on the Nashville pike has been acquired by a number of town people who hope by next summer to make the site a creditable resort for pleasure loving people."
- 7.3 "The Spirit of Lost River" by Raymond Cravens states that the property was acquired by E.S. and W.L. Perkins in 1917. They operated a walnut factory at the site using water from the river for washing.
- 7.4 A photograph caption of the roadside attraction dated "c. 1930" indicates 1926 as the date the tourist attraction opened. Billboards in the photo promote "Tourist Cabins with Running Water", "Barbecue Hot and Cold Lunches and Dinners", and "See Lost River Cave, Admission 10 cents". Twelve tourist cabins were built. Several photographs document the evolution and

development of the roadside attraction through the 1930s adding a gas station, museum and curio shop.

7.5 Curiosities exhibited in the museum included a “man who turned to stone”, and a “man who turned to leather”. Robert Ripley is touted for his “Believe it or Not” claim that Lost River is the “shortest, deepest river in the world”.

7.6 Walking cave tours were offered in the 1930s and 40s to see attractions such as the Jesse James Hideout with full-size mannequins and to drink out of the Jesse James spring. Uncle Bill often led tours in the cave spinning mostly fanciful yarns to entertain tourists. This tour tradition has historic connections to the early 1800s when slave guides led tourists into regional caves.



Uncle Bill (left) guided many early walking tours through Lost River Cave in the 1930s and 40s.

7.7 The December 16, 1933 issue of Billboard Magazine reports that a “unique (amusement park) development contemplates underground café, hydro-electric plant and novel lighting effects...to flood the entire cavern with lights.”

7.8 In 1933 the dam was rebuilt and a water turbine electric generator was installed. This generator supplied all the electricity for the site. The powerhouse and dam remain standing today.



Museum and ticket office in the 1930s.



Visitors inspecting the “Man who turned to stone” at the Lost River Cave museum.



Early cave walking tours included a drink out of the Jesse James spring.



The dam and generator house were built in 1933 to supply electricity for the site.



Pictures of the Lost River Cave Nite Club in the 1930s and 40s.

7.9 (May 4, 2006, interview with Jimmy Stewart who operated the night club for four years, 1936-'40 and 1946)

- The dance floor was poured in 1936. Beer garden was on top. The dance hall was BYO liquor. Had to pay admission to the dance floor, \$2.50/couple, \$1.50/person. Had two slot machines sitting on the bar for awhile.
- Bands included Francis Craig and Adrian McDowell from Nashville. Dinah Shore got her start with the Francis Craig band. Ella Fitzgerald was the most famous name (before the war, I believe). Billy Vaughn (from here) also played here in the 1950s. Joe Marshall played country music.
- This was back before air conditioning and people came to escape the summer heat. Used the phonograph most nights (open every night) and "Shake-rag" (colored) bands some weekends. Bands were too expensive to have very often. Could hold about 300. When we hired bands it left little profit. Usually had about 150. Had a "Fair Hop", big dance after the fair.
- Perkins owned the property. He started the whole thing. Smith ran the station. He rented the cabins and sold souvenirs.
- The tourist attractions included "man who turned to stone" and "man who turned to leather". Perkins was a traveling salesman and picked up stuff for his museum. He had lots of guns, all sold at auction when he died.
- Kept getting fined for something—dancing on Sunday, open too late—whatever. Might have contributed to the nightclub closing.

7.10 In the 1950s, more widely available air conditioning and the bypass of Bowling Green by Interstate 65 made the roadside attraction and dance hall unprofitable and it closed for good.

Sub-theme 8: A Community Saves a Cave

Through the efforts of dedicated people, Lost River Cave has been restored as a tourist attraction and has been promoted as a valuable historic and natural resource for the community.

Messages

- 8.1 An archeological excavation in the early 1970s uncovered artifacts from early Indian cultures and the Civil War. These finds stimulated a drive to purchase the cave and valley for a state park. Although this early movement failed, key leaders took up the challenge to save the area, and they succeeded in listing the site on the National Register of Historic Places.
- 8.2 Dr. Nicholas Crawford of Western Kentucky University (WKU) conducted extensive hydrological studies of the drainage basin in the early 1980s.
- 8.3 Dr. Raymond Cravens, Mr. Owen Lawson, and Mr. LeRoy Highbaugh purchased the cave and valley in 1970, and in 1985 gifted 23 acres to WKU, which included the cave and original tourist site. Students with the Center for Cave and Karst Studies at WKU started the clean up, rebuilt rock walls, constructed trails, and installed the lighting for a walking tour of the cave.
- 8.4 In 1990 the Friends of Lost River was incorporated and leased the property from WKU with the promise to restore, protect, and develop it as an educational tourist attraction. Over the past sixteen years, the Friends spearheaded



In 2001, the Friends of Lost River Cave secured a \$100,000 challenge grant from the Bowling Green Convention and Visitors Bureau to build a bridge that spans the valley. This enhanced accessibility to the cave and encouraged tourism. WKU News and Events, October 11, 2001.

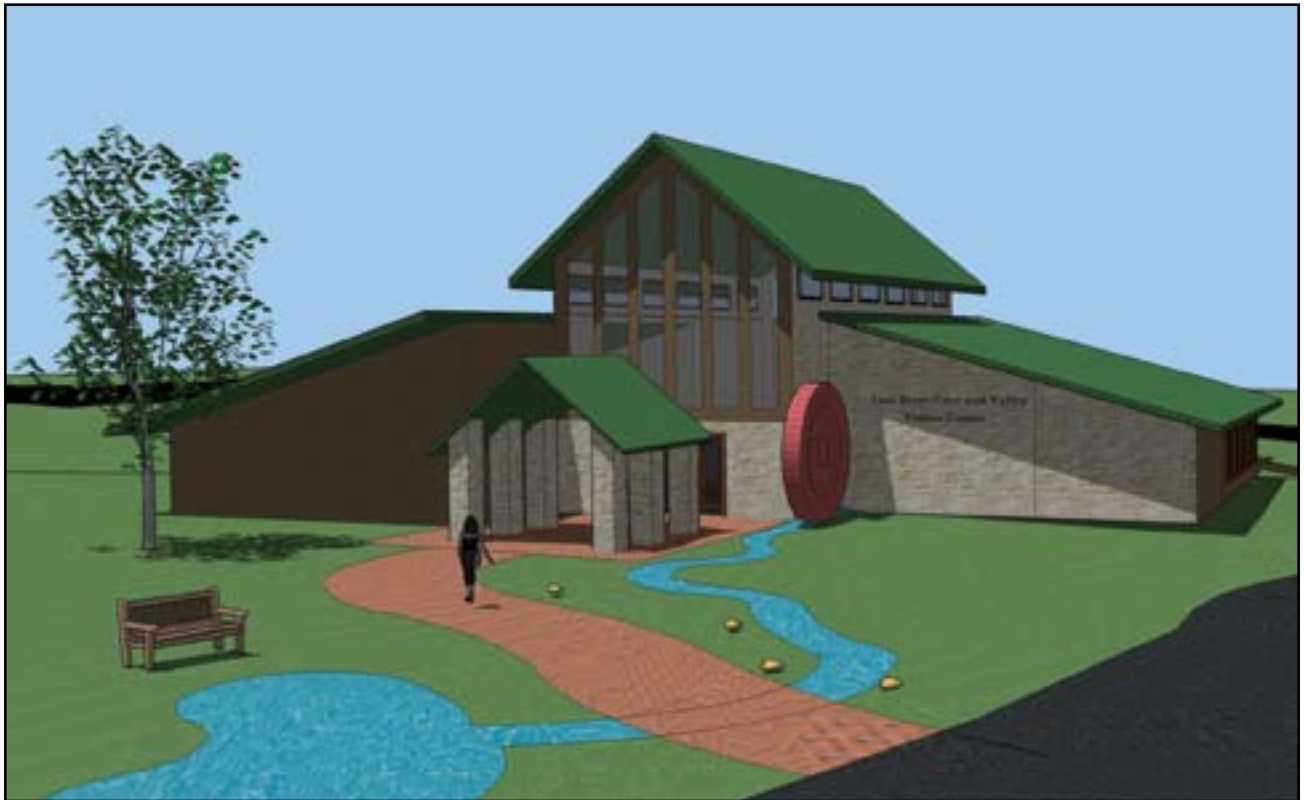
www.wku.edu/news/releases01/october/lostriver2.html

development and promotion of tourist facilities, educational programs, and land acquisition. They rebuilt the dam and dance floor, continued the cleanup, installed trails, initiated a boat tour of the cave, and started having dances again on the historic dance floor inside the cave entrance. The FOLR Board under the leadership of Nancy Shreve, Whit Crawford, and others, opened the cave and valley for public viewing. The Lost River Cave is once again a thriving tourist attraction and community resource.



Chapter 5—

Interpretive Facility and Site Development



Conceptual rendering of a new Lost River Cave and Valley Visitor Center.

The concepts and recommendations presented in this chapter for site and facility development are a response to the many issues and needs expressed by the Lost River Cave & Valley stakeholders and staff during the visioning process. Schmeckle Reserve Interpreters has developed design solutions that synthesize the ideas and dreams of individuals which were expressed in the nominal group meeting and interviews.

Lost River Cave and Valley Visitor Center

Purpose

The primary purpose of the interpretive center is to welcome visitors to the Lost River Cave and Valley and to orient them to the significant features and stories of the site. It is intended to prepare visitors for an optimal cave and valley visit. It provides valuable experiences and activities that help to alleviate congestion and unproductive wait time for the cave tours.

Additionally, this singular building must serve multiple functions. It should be a visually impressive gateway to the site, versatile enough to host events such as workshops, conferences and weddings while often being open simultaneously for public tours, school visits and daily tourist activities. To be successful, its versatility and practical functionality must be balanced by graceful design and a sensitive connection to the site and themes. The structure must be designed to change and grow to meet evolving needs as the Lost River Cave and Valley expands its services and its audiences.

Conceptual elevational renderings of the Lost River Cave and Valley Visitor Center, which serves as a gateway to the site.





Limestone elements repeated in blocks, columns, overlooks, and buildings throughout the site harmonize with the natural landscape and visually unify the visitor's experience.

Great River Road Visitor Center in Prescott, Wisconsin
Schmeckle Reserve Interpreters, Planners

Design Elements

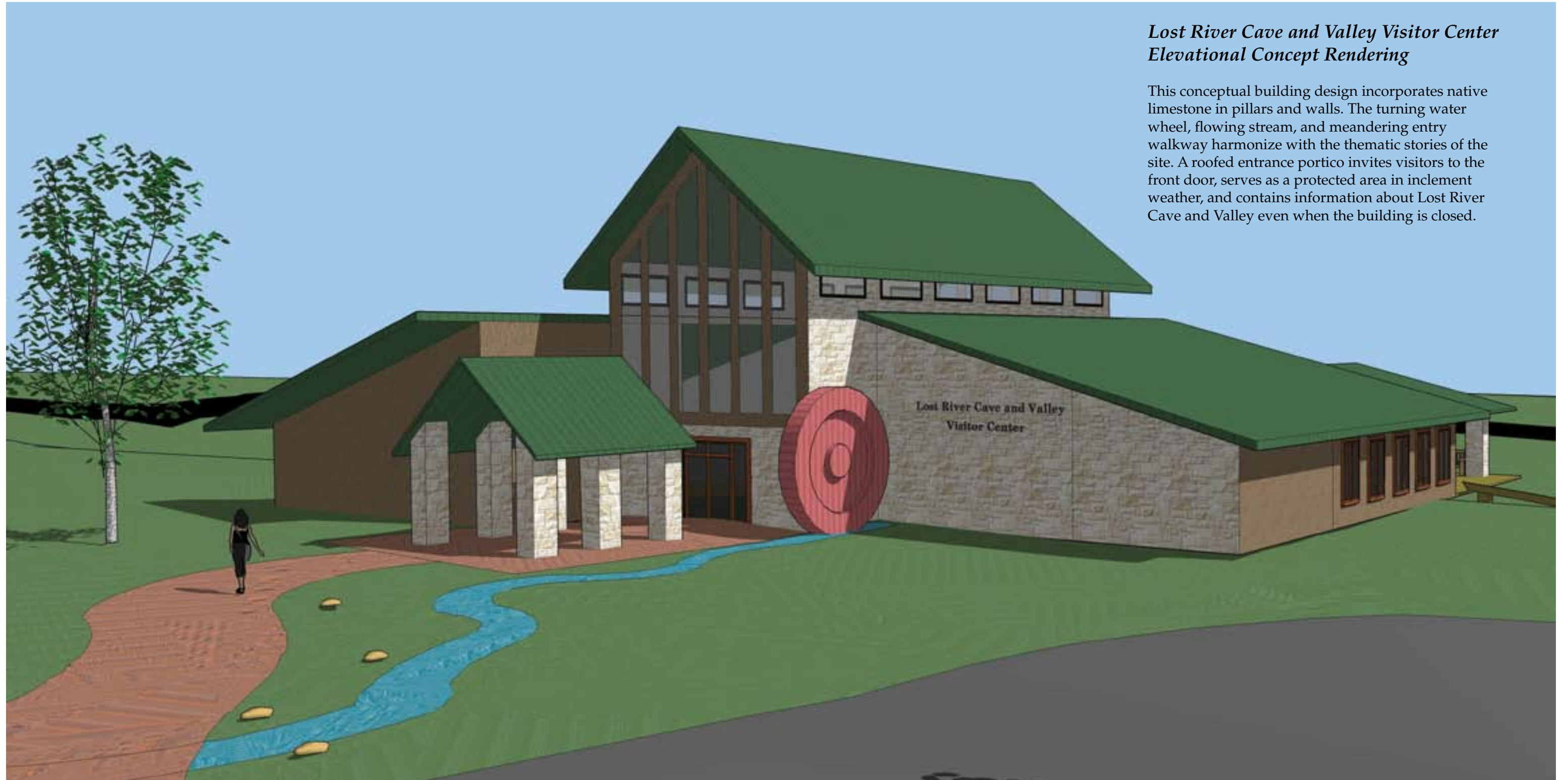
The architectural qualities of this building should enhance the spirit of place that one feels at Lost River Cave. The design should reflect the stories, myths, and the cultural and natural history found here.

Visitors should experience a holistic and cohesively attractive facility that feels harmonious with the site. Features like the building, shelters, trails, overlooks and parking lot should be visually unified in their use of materials, textures, and colors.

Native limestone should be incorporated into as many building and landscape elements as possible. This stone will visually merge the existing walls with the nearby cliffs and cave, and as a building material will provide a sense of quality and permanence. Limestone blends harmoniously with the landscape and ties to the themes of the site.

Limestone blocks lining the entrance walkway direct visitors into this portal hub where they can organize their visit. Stone columns and partial walls that accent the visitor center façade will be replicated in shelter buildings, overlooks, and walkways to provide a “familiar” look throughout the site. Wayfinding and a sense of “where to go” will be greatly enhanced by repeating visual cues that direct and guide visitors through the site.

The Leadership in Energy and Environmental Design (LEED) Green Building Rating System is the nationally accepted benchmark for the design, construction, and operation of high performance green buildings. LEED promotes a whole-building approach in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality. The Lost River Cave Visitor Center should select an architect who has a proven record of building designs that achieve a LEED rating.

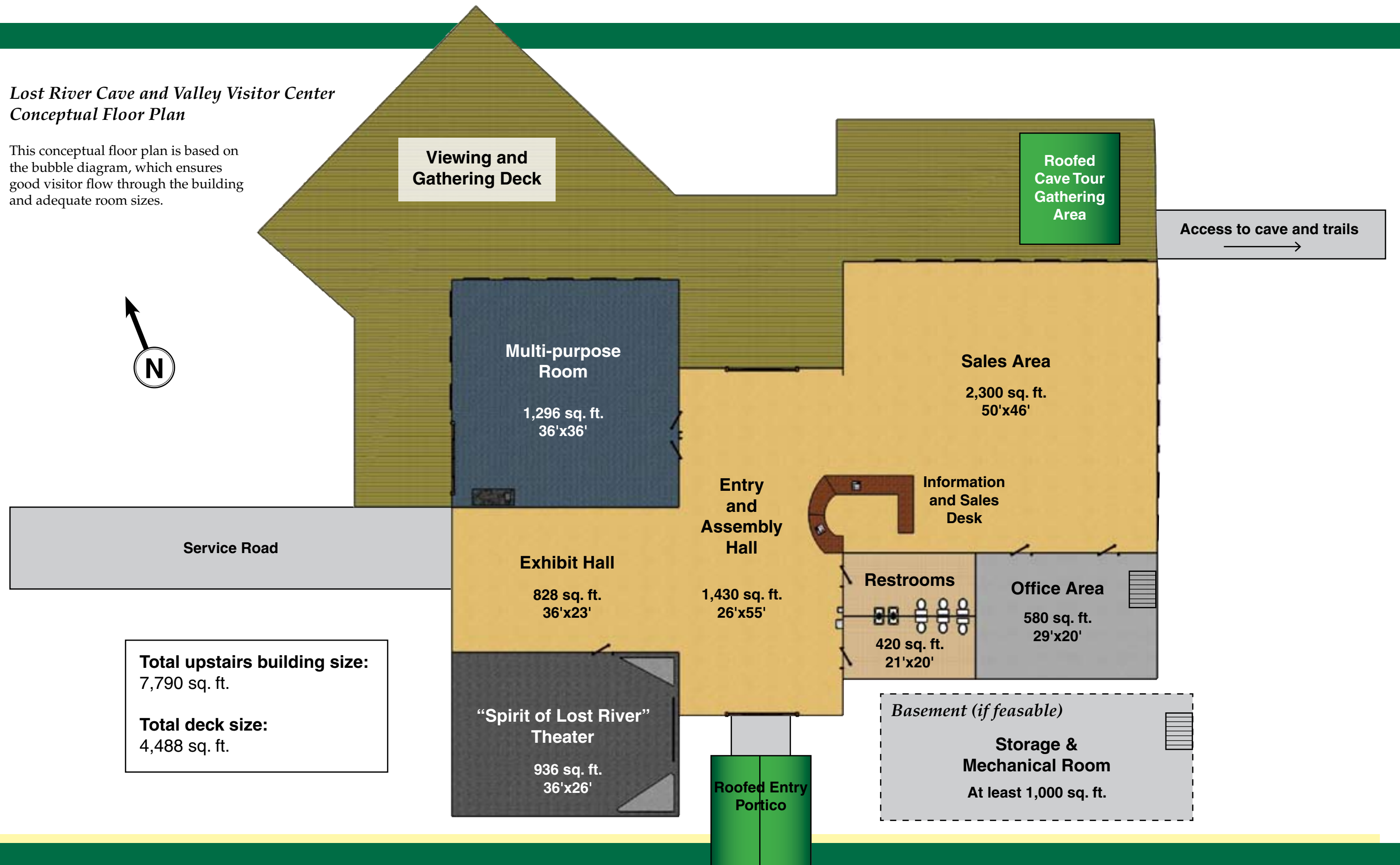


***Lost River Cave and Valley Visitor Center
Elevational Concept Rendering***

This conceptual building design incorporates native limestone in pillars and walls. The turning water wheel, flowing stream, and meandering entry walkway harmonize with the thematic stories of the site. A roofed entrance portico invites visitors to the front door, serves as a protected area in inclement weather, and contains information about Lost River Cave and Valley even when the building is closed.

**Lost River Cave and Valley Visitor Center
Conceptual Floor Plan**

This conceptual floor plan is based on the bubble diagram, which ensures good visitor flow through the building and adequate room sizes.



Interior Design

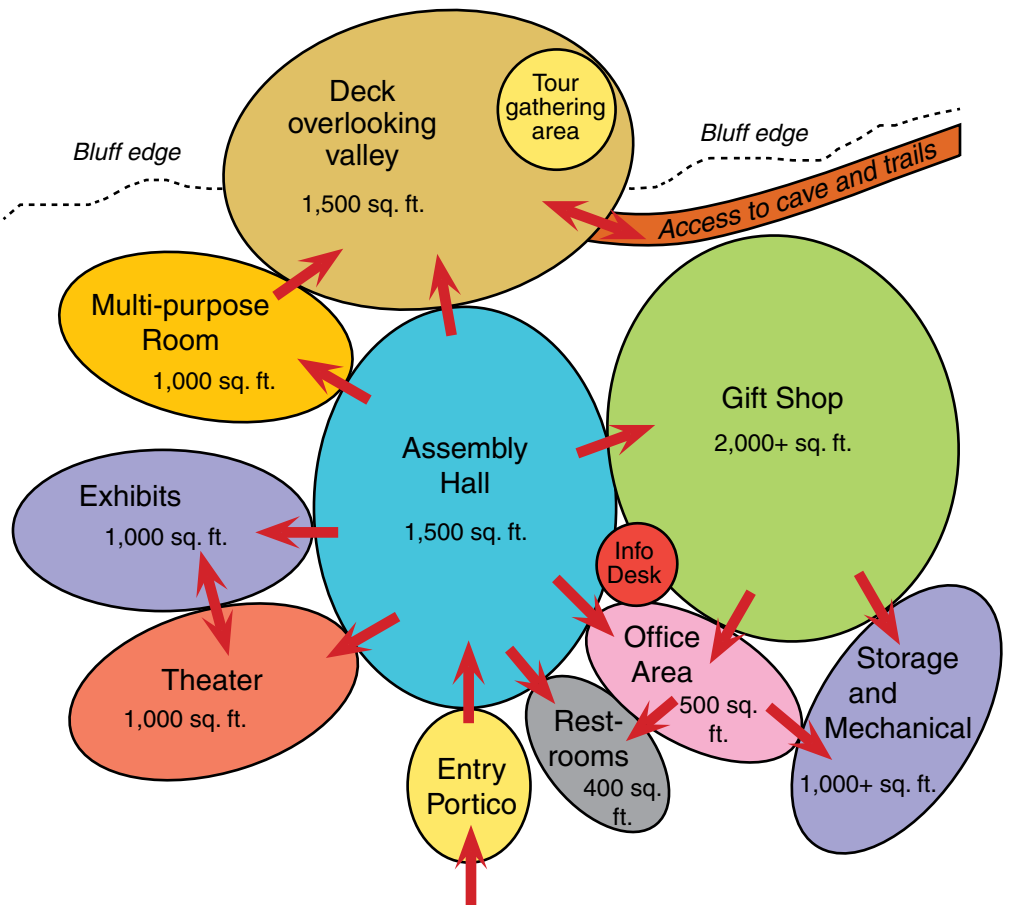
The interior design of the visitor center must assure that there is a smooth flow of visitor traffic from the entry, to the restrooms, past the information desk, through the theater, exhibit hall, sales area, out to the decks, and on to the trail system. It must permit a sense of openness that invites and allows people to move freely from one use area to another.

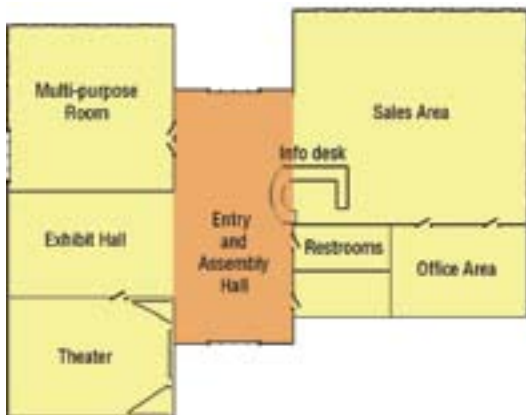
The interior of this building should encourage visitors to explore, to move quickly through some areas and linger in other spaces. It should serve as an activity hub and as the flagship of visitor orientation at Lost River Cave.

- Care should be taken to minimize echoing off of hard surfaces. Service areas, like the restrooms and information desk should be clearly visible to a guest entering the building.
- Entry doorways should contain grates and mats to help keep the floors clean.
- The use of sustainable and recycled materials will reinforce the conservation values of the Friends of Lost River. Universally accessible design should be incorporated throughout the building and the trail system.

Bubble Diagram

A bubble diagram shows the general sizes and relationships among various components of the visitor center, based on the specifications outlined in this section. Architects use the diagram as a foundation for developing an actual floor plan.





Entry and Assembly Hall

A high ceiling in the central chamber of the building creates a dramatic entry and guides visitors through a spacious corridor to other rooms that open off of this grand room. This space is cave-like in an understated way and reinforces the central theme of the site. Its large size allows for unimpeded movement through the core of the building to other destinations, even during peak periods of visitation.

For evening events, the great room transforms into an elegant hall where large social gatherings can take place. Its tall ceilings, soaring pillars, and expansive glass windows promote a sense of grandeur and an environment appropriate for social events and celebrations. During these festivities, the adjoining use areas (like the theater, exhibits, and sales) can be conveniently closed off while the adjacent multi-purpose room can be opened to host food services or other supporting activities. The large viewing decks that stretch out over the valley provide an outdoor escape to cool night breezes, smells, and sounds that drift up from the valley. These decks provide an overflow area and a contrast to the more formal interior hall.

During the day, the large windows in this central room bathe the interior of this space with ambient light that draws people into and through the building. North facing views across the valley are intended to entice visitors down the length of the central corridor past the adjacent exhibit areas, information desk, and sales area. They exit the building onto decks that give them views into the valley and a blue hole. This north facing deck remains shaded all day providing an excellent area for groups to linger as they wait for a tour guide or as they study a map and read about other activities on the site.



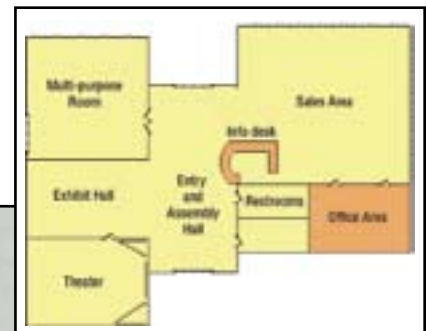
High ceilings and tall windows frame views of the valley beyond, enticing visitors to explore outside. Clerestory windows above help increase the natural ambient light inside. The open floor plan allows for easy access to the exhibits, sales area, restrooms, multi-purpose room, and theater.

Service Desk and Office Space

The information and sales desk should be prominently located where visitors can easily find it and where a receptionist can view entrances, exits, and all public areas. It must be large enough to facilitate several staff members simultaneously as they sell tickets for tours, sales items, and answer customers questions. It should also be designed to allow just one staff member to perform all of these functions during slow periods of visitation and serve as the hub of all building operations.

- The desk should be well illuminated to focus attention on its location and to allow easy reading and viewing of maps and other material by people who have diminished sight.

- The public counter should provide access to all, including children and people in wheelchairs. This includes a section with a lower counter and room for a person in a wheelchair to move up to and under the desk to view maps and purchase items.
- Office space for two staff members should be adjacent to the desk complex to allow for book keeping, money sorting, private staff conversations, and other administrative functions. The space should include a kitchenette.



Restrooms

Restrooms should be located near the entry doors and should be easily seen as one enters. They should be adequate to meet peak use such as when school buses arrive (up to 60 children at the end of an hour long bus drive).

- Restrooms must be universally accessible and should accommodate families with babies.
- Sustainable features such as reduced water usage, recycling techniques, and other innovations to “live lightly in karst country” should be interpreted here.
- In addition to meeting visitors’ most basic needs, restrooms are a place where other orientation and information can be communicated. As people wait for family or friends to use the restrooms, there is time to study maps, read messages, and quietly absorb information.

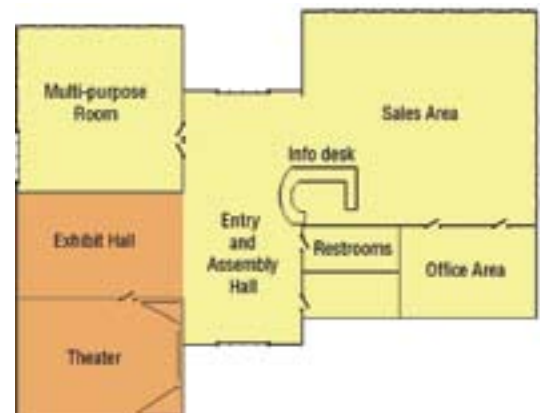


Theater and Exhibit Hall

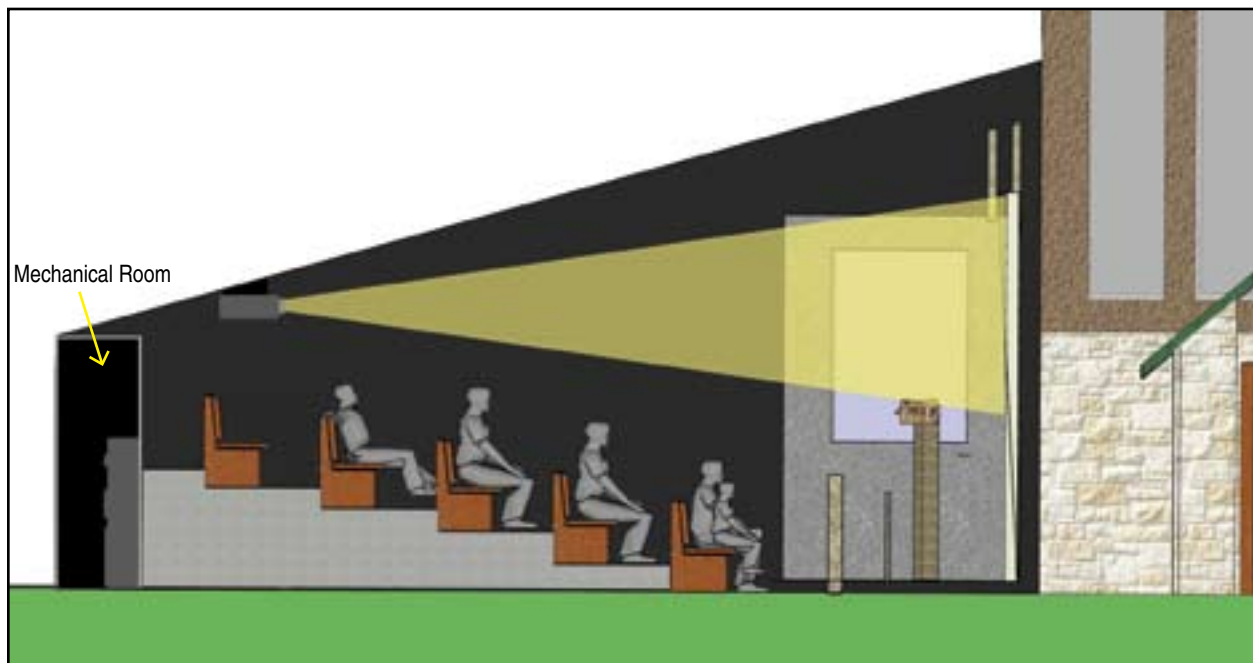
The theater and exhibit hall are each designed to immerse visitors in experiences that connect them to important stories of this exciting place.

The theater production is designed to be a holistic, involving experience that visitors will value and talk about long after their visit. The production will be multi-sensory with surround sound capable of vibrating the seats during a simulated cave collapse. The stage will feature objects and scrim that are illuminated as the action unfolds. To be effective it requires surround sound, dramatic lighting effects, and mechanical props that should be housed in a room used only for audio/visual productions.

- The wall with the projection screen should be at least 16 feet high.



- The theater should seat 75 children (approximately 60 adults) on carpeted risers.
- Both the theater and the exhibit hall require controlled lighting. They should not be lit with ambient light. Both rooms have very specific requirements for space, electricity, and acoustics. They need high ceilings, sound deadening materials in the ceilings and walls, and special electrical systems.
- The result of isolating and controlling these rooms is to achieve environments where visitors can focus their total attention on the stories that they will encounter in the valley and cave. These rooms and the personal involvement that they support are critical to developing a first class visitor experience that is unparalleled in “cave country”.

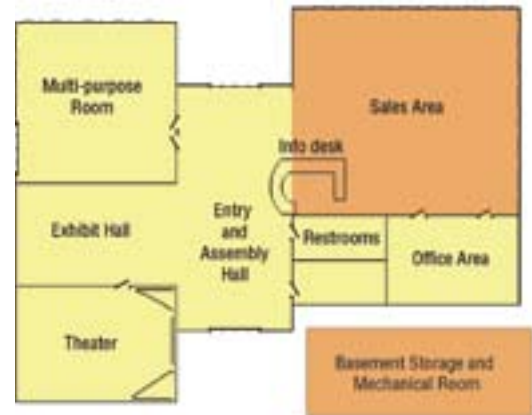


A high ceiling for the theater screen ensures that the maximum size image can be projected, enhancing the impact of the movie. The increased stage size also allows for the best placement of real objects that will be revealed during the presentation.

Sales Area and Storage Space

The store should continue to be an integral component of the visitor experience at Lost River Cave. It offers the possibility for unlimited profits but it also serves crucial public relations functions, and has unrealized potential as an important educational tool. Visitors value take home items that relate to the themes and the memories that they have of their experiences at Lost River.

- The sales area should be open (entire wall) to the main circulation route through the building. It should visually share space with the grand room but not spill out into it so much as to impede traffic flow.
- The highly profitable sales area should be increased in size and inventory.
- A large storage space is necessary for sales inventory. If feasible, the a storage area should be placed in a basement under the sales area along with all building mechanical



equipment. It should be designed with interior staff access and exterior delivery access. Under-counter and in-store storage should be maximized. Storage space in the existing administrative building should also be maintained.

- Counters for cash registers should allow for at least two machines to simultaneously accommodate ticket sales and shop sales during busy times without creating a bottle neck.



An open store layout invites visitors to explore before and after their visit to the cave and valley.



Multi-purpose Meeting Room

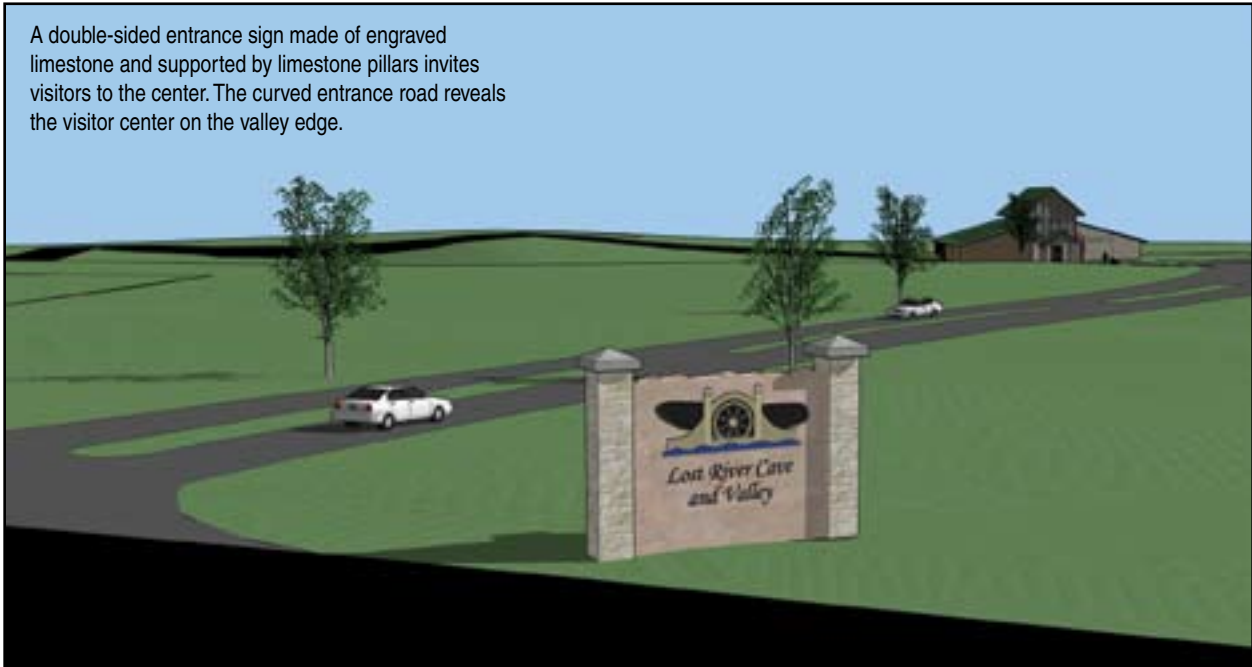
This large open room is designed for maximum versatility. It can seat 150 people for programs or meetings, it can be arranged with tables for meetings or dining, or it can be divided into two classrooms for school visits or “break out sessions” in workshops. It should include the following features:

- Have a high ceiling to accommodate visual projections onto a large screen and to maintain appropriate proportions to the room.
- Window and doors that overlook the valley and that open to decks that can be accessed for work sessions and social mixing. Light blocking shades on all windows.
- Sound absorbing floor and ceiling material.
- Sound proof room divider.
- Storage closet with double doors for tables, chairs, and portable equipment.
- A kitchenette to facilitate food catering.
- A digital projection and audio system mounted to the ceiling for displaying computer presentations, DVDs, and video tapes.

Numerous windows providing views of the valley and access to the deck make the multi-purpose room an ideal place for meetings, classes, receptions, etc.



A double-sided entrance sign made of engraved limestone and supported by limestone pillars invites visitors to the center. The curved entrance road reveals the visitor center on the valley edge.



Entrance Drive

Visitor expectations are set very early in their contact with Lost River Cave. The quality of the website, DOT highway signs, and entrance drives introduce the standard of quality that people can anticipate at the site.

Signs, parking lots, and entry walkways make indelible impressions on first time visitors. Well prepared entrances can assure visitors that they have made a good choice and can introduce them to important themes and story lines that will make their visit rewarding. When people feel safe, comfortable, and oriented, they are more likely to invest time and explore the site. When entrances are underdeveloped or where wayfinding is confusing and of substandard materials, people's expectations of reward are lowered and the amount of time that they will invest in their visit is proportionately reduced.

- The design of the entrance drive from Dishman Lane should alert first time visitors to anticipate their turn off Dishman well in advance. A large, visible entrance sign should be coupled with departmental transportation road signs that warn motorists of the upcoming driveway.
- The layout of the driveway should help reduce the speed of entering vehicles and focus people's attention on their surroundings. Curves and islands of vegetation should be considered for these purposes.
- The drive to the center should feature a long view to the visitor center.
- Road signs and informational signs on the drive in should conform to the design of other signs on site. Type style, letter size and color should be standardized.

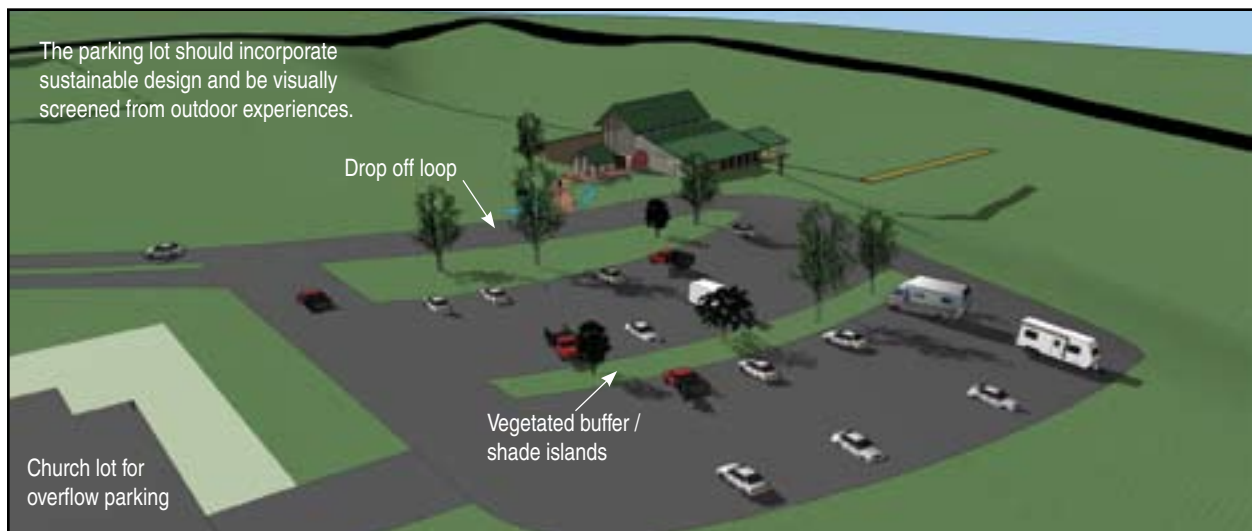
Parking

The placement of the parking lot should not “crowd” or impose on the visitor center. The walkway to the building should be designed as a transitional opportunity for visitors to “decompress” and as they relax, study the landscape as they walk, and anticipate what the experience in the building might be.

- A drop off loop near the front door should permit the unloading of buses, mobility impaired visitors, or passengers during inclement weather accessible entry to the building.
- The parking lot should be developed to provide natural shade for vehicles. It should be divided and buffered with shrubs and other landscaping to reduce the visual impact of a large lot. A series of small lots screened with landscaping is preferable to one large lot of continuous hard surface.
- An overflow lot should be created for special events parking. It should be maintained as a grassy open area that allows for percolation of rain water. Another possibility is to make

arrangements with the church to use their parking lot for special events and as an overflow area.

- Runoff should be directed to swales or retention areas for slowing and filtering.
- Porous parking lot surfaces that permit water infiltration should be considered. Pavers, recharge beds, and porous asphalt should be considered.
- Impervious driving surfaces can provide access to porous parking stalls.
- Perimeter and interior landscaped areas should be designed as bio-retention filter areas capable of cleansing storm waters.
- Lighting should be kept to a minimum and directed down to limit light pollution.
- The parking lot design should be used as an educational introduction to the Karst Story.
- Media should be developed that interprets sustainable practices.





Walkway to the Building

- Must be wide enough and hard surfaced to meet standards of the Americans Disabilities Act and to permit service/emergency vehicles to access the building
- Low voltage lighting should illuminate walkway surface only to avoid light spill over and pollution.
- Create a line of sight to the front of the building where a working mill wheel and a bubbling stream will draw visitors attention.
- Stream flowing from the water wheel roughly parallels the walkway. It is accented with limestone boulders, landscaping, and several metal cutout sculptures that symbolize people of the Lost River Cave (Native American with cane torch, miller, civil war soldier, and a couple dancing).

Decks

Decks provide a cost-effective transition between the interior of the Visitor Center and outdoor experiences in the cave and valley. Scenic views of the valley and glimpses of trails and a blue hole invite visitors to venture over the treetop bridge and explore the site.

These extensions of the building provide a welcome overflow area during high-use periods. They also offer fresh air and private space for “break out” sessions from the multi-purpose room.

During large evening gatherings in the Assembly Hall, people can spill out onto the deck for cool night air and group conversations. The practical day to day use of the decks will be as assembly sites for school classes and tour groups.

Tour Gathering Area

Currently, cave tour groups meet on the other side of the treetop bridge at the intersection of trails that lead to the valley and cave. Although signage directs visitors to this gathering area, finding the site can be confusing.

Moving the tour gathering area to a site adjacent to the new visitor center would be beneficial to both visitors and the tour guides. A covered portion of the deck with benches would provide shelter from rain and shade from the sun. Uncovered areas allow people the option to seek sunlight in cool seasons.

When visitors purchase tickets, it will be easy to point out the sheltered area on the deck to gather. In addition, tour guides can observe the number of visitors gathering through the windows of the gift shop, and can wait for last-minute ticket purchasers.



Use of Existing Buildings

Administration Building

The current welcome center and sales area will continue to function as an administration building.

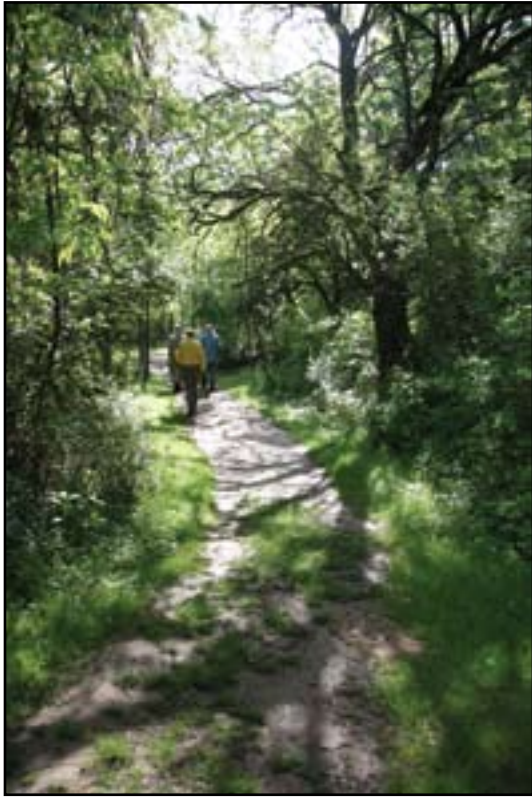
- The current sales area can be reconfigured into additional office space.
- The building will also serve as a staff and volunteer assembly area and work space.
- Primary storage for the sales area will remain here.
- A moderate sized meeting room should be developed to accommodate staff meetings, while hosting spontaneous meetings of supporters and clients without tying up the Director's office.
- The current parking lot, southwest of the building, should continue to be used for building occupants.
- Screening the building with vegetation and installing appropriate signage will help visually tell visitors that the facility is private.



Maintenance Building

The Maintenance Building will continue in its present use, but in the future it might be enlarged and upgraded to allow for additional woodworking and site maintenance functions. This would require winterization of part of the building.





Trail surfaces convey messages to potential users. Ill-defined trails discourage use. May, 2006.

Trails and Wayfinding

The visitor center and cave are the heart of the Lost River experience; the trails are the circulatory system. They must move visitors through the site from one hub to another in a steady circular flow.

A series of trail loops radiating from a central hub is optimal for monitoring and controlling visitor use but more importantly; a loop system creates a layout that people can comprehend and walk without getting lost or waylaid. A loop system returns visitors back to their starting point. This system is also efficient for school classes who are often divided into small learning groups which head out to activity sites. Class periods require timely travel to and from learning stations and a loop system facilitates this.

The trail system should present opportunities for pleasant and memorable experiences.

A walk through the site should be a sensory and involving experience that capitalizes on the significant features of the setting. The trail system should be designed to incorporate the aspects of mystery, variety, and beauty. Some boardwalks, vistas, and viewing platforms will provide unique perspectives of features like blue holes, springs, and streams. Overlooks from the valley rim will give visitors a bird's eye view of the valley.

Since many of the trails will be open even when the cave and visitor center are closed, trailheads must provide, orientation, a warm welcome, and a positive introduction to the Lost River Cave and Valley and its mission.

Studies of natural areas and parks show that visitors are reluctant to explore trails until they feel safe, oriented, and have a sense that they are in control. Apprehension about safety and getting lost or confused on the trails (even in a small urban setting) are the primary reasons that visitors will avoid exploring

them. When people feel well oriented and confident that they can find their way around, their eagerness to explore an area increases and their concerns are lessened. Several actions can be taken that make the trails more appealing to people and that provide better wildlife habitat and viewing.

Trailheads

- Create trailheads that are inviting gateways that promise users safe, informative, and fun trail adventures.
- Provide incentives and destinations to encourage visitors to explore a trail. Often trail names or pictures on the trailhead panel will promise adventures specific to that trail.
- Increase familiarity by providing maps, trail signs, and by creating well maintained trail surfaces. Trail signs and maps must not appear expedient or temporary.



Effective trailheads, like this one at Kohler-Andrae State Park in Wisconsin, encourage use of the trail system. A simple and attractive sign, well-defined boardwalk, and view of the marsh beyond promise a wetland adventure.

Maps

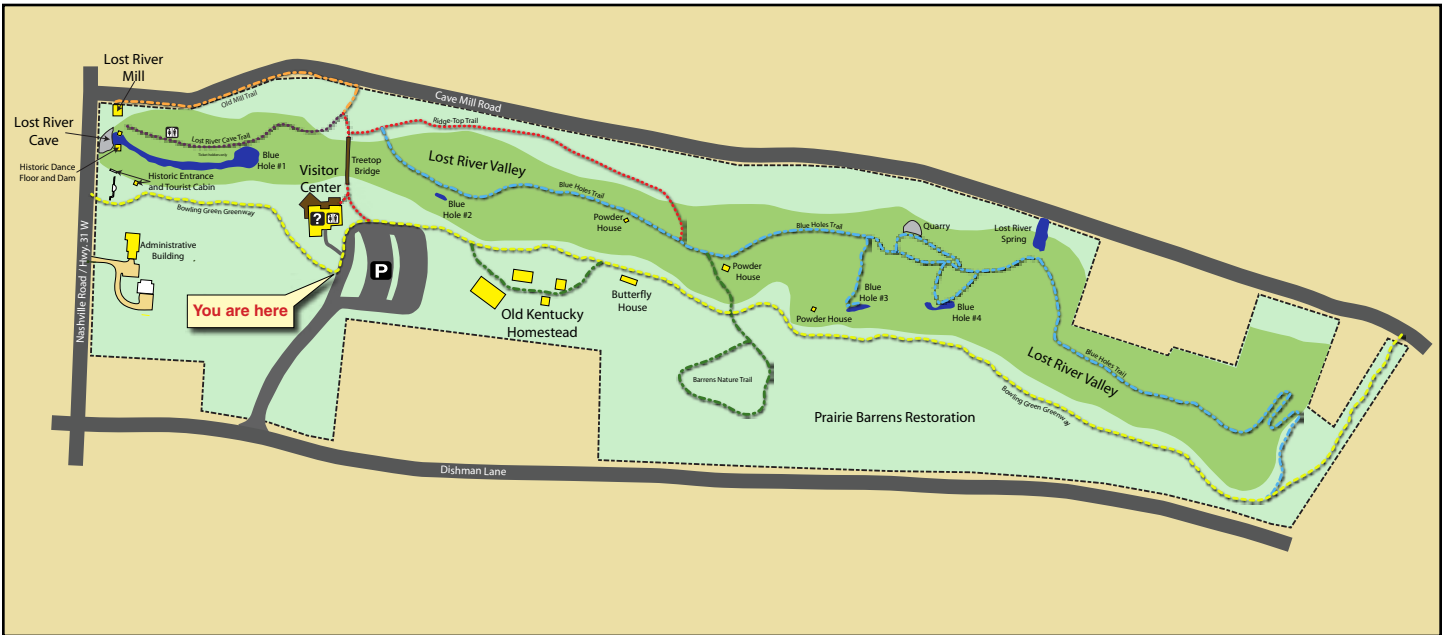
Directly communicate the layout of the site through simple maps and visuals. Let people know where they are and the places that they are likely to visit. Maps should emphasize highlights and path structure not details.

- Keep maps simple.
- Highlight main routes.
- Label features directly on the map, not on keys.
- Each map should have a “you are here” symbol.
- Prototype maps should be pre-tested and modified.



Maps should be simple, highlight main routes and features, and be oriented to the site. Schmeeckle Reserve, Wisconsin.

- Three categories of information are needed at locations on a trail map by new visitors.
 1. Landmarks- prominent elements of the setting that anchor an individuals understanding of it.
 2. Choice points; where trails branch, bridges cross streams etc.
 3. Large regions of uniform content such as woods or old farm field.
- Orient maps to the viewer’s perspective regardless of the compass direction.



A simplified trail map oriented to the site would entice visitors to explore the trail system and enhance wayfinding. Main features and trail routes are labelled directly on the map, universal symbols are used, and a “You are Here” is clearly indicated.

Trail Design

- Create openings that increase visual access and a sense of safety.
- Plan vistas and openings that allow the most dramatic directed views to blue holes, streams, quarries, cliffs, and even wildlife feeding stations.
- Use structures like boardwalks, decks, and bridges to give visitors unique views and vistas.
- Provide benches and gathering places at sites where people choose to linger.
- Use curves to create mystery and draw people down trails.
- Screen objectionable views. Use plantings to buffer the impact of views of houses and roads.
- When possible, position “views” on decks and vistas so visitors are looking away from the sun. This will allow birds, flowers and views to be spotlighted or illuminated.
- Use materials for benches, fences, bridges, boardwalks, decks, and trail surfaces that are harmonious with the site and the experience.



Trails that are bordered by dense vegetation are less inviting and uncomfortable for users. Maintained openings enhance the sense of safety and feel less crowded. March, 2006.



The current gathering area at the end of the bridge has signage which directs visitors to the trail system, but does not formally define a trailhead to site experiences or visually invite entry.



A roofed kiosk with a site map and photographs of other experiences commands attention, formalizes the area as a trailhead, and prepares visitors for heading out on the trails. See Chapter 6 for more details about this orientation hub.

Orientation Hub (at the end of the Treetop Bridge)

The central location of this trailhead allows it to function as a secondary gateway to the site. When the visitor center is closed this is the principle portal where visitors will be greeted by signs, maps, mission statements, and rules. All trails radiate out from this point to other activity destinations.

This site provides a natural opportunity for people to leisurely read and study information and media that orient them to the features and attractions in the valley and barrens. They learn how the valley was formed and about common plants and birds to be seen here.

A large map orients them to the pre or post-cave tour experience opportunities on the entire site. “Have you visited the Old Kentucky Homestead? Do you wonder what it was like to come here as a tourist in 1930? Would you like to grind wheat at a water driven grist mill?”

This hub should serve as a transition area from the formal visitor center to more natural outdoor experiences. Hard surfaces should be buffered with soft bark-mulched landscape vegetation at the margins of the hub. It should be a place where people feel comfortable and feel that they can take their time making decisions about what activities they will participate in at LRC&V. It will serve as a rendezvous site for families and groups to organize and reassemble. Because of its commanding location at the end of the bridge and its central position within the trail system, it serves as an orientation landmark for visitors.

A green metal roof at this site would formally identify it as an important assembly area. The trademark roof would visually link it to the visitor center and would provide all-weather protection for this important gathering place.

Class A Trails: High traffic trails that must be universally accessible

Several high traffic trails used by nearly all visitors should be hard surfaced to prevent erosion, and to accommodate mobility impaired people and maintenance vehicles. Underground wiring for trail lighting is needed for night time use.

- The main trail from the visitor center over the bridge to the cave entrance. This multi-purpose trail is particularly steep and subject to erosion. Water bars and grates should be installed as needed. The edges of this trail should be well defined and native wild flowers should be planted right to the edge. The blue hole overlook should be better defined. Generally, this trail should be a carefully maintained gateway to the site featuring native vegetation. Extra attention should be given to its upkeep and attractiveness. It should be similar in appearance to the entry walkway from the parking lot to the visitor center.
- Primary walkway to the visitor center. This walk should be wide enough to accommodate groups of visitors, and maintenance and service vehicles. It should be wider than any adjoining trails to give a strong visual cue that it is the path to the front door. It should be landscaped with select placement of limestone groupings on each side of the walk as a unifying element on the site.
- Old Mill Reconstruction Site above Cave. When the mill is opened, the access road from the Trailhead hub at the bridge to the proposed sidewalk on Cave Mill Road should be surfaced for universal access. The Mill site will become a “must see” feature at Lost River Cave.



The steep trail down to the cave should be hard-surfaced. Water bars and grates will help minimize erosion.



A well defined Blue Hole #1 overlook will be more aesthetically pleasing and limit impact to the site.



The boardwalk trail at Crowley's Ridge Nature Center in Arkansas protects the sensitive wetland habitat, avoids muddy ruts, and provides a solid walking surface for visitors.



Trail surfaces should assure visitors that they are "on the right path."

Class B Trails: Trails that link activity areas

These secondary trails are used by visitors to access primary activity hubs such as the butterfly house, homestead site, blue holes, and the tourist cabin. Steep slopes, muddy areas, and serendipitous side trails should be eliminated where possible. A uniform trail tread, such as limestone or landscape bark, should be added for all weather use and as a unifying, and refining element that assures travelers that they are on the right path. It should not be asphalt as this detracts from the natural feel of the site and would encourage wheeled access to the valley. Trailheads should be well developed with maps and descriptions of the highlights and destinations on each trail. Interpretive panels should be added to each trail to help connect visitors to the important stories that will give them insights to the patterns and relationships of all the activity areas.

The viewing areas above and adjacent to the blue holes should be constructed of treated lumber and recycled plastic decking to protect the banks from erosion. This also makes a statement about the respect that we should have for these blue holes.

The valley experience should be a high quality, natural experience. Well signed and maintained trails should guide visitors through a serene and rustic environment.

Greenway Trail Corridor

The proposed public trail through Lost River Cave and Valley is an opportunity to showcase the community's sense of place to residents and visitors alike. LRC&V is a jewel on the walkway that will unite a number of community resources. In many ways it has the chance to reassert itself as a community touchstone and introduce newcomers and tourists to the many opportunities in Bowling Green.

The visitor center can serve Greenway users with amenities like restrooms, parking, trail maps, and most importantly, human hosts. It will become a well identified entity on the trail corridor and will gain popularity within the city. The focus on local natural and cultural history should appeal to many trail users who will identify with the values demonstrated by the Friends of Lost River Cave.

The Greenway Trail will skirt the east and southern rim of the valley sanctuary. Decks, overlooking blue holes will provide tantalizing glimpses of the valley below. Maps will invite people to enter the valley at the trailhead near the visitor center or at the eastern boundary of the valley. The trailheads will have appropriate gates to discourage bicycle entry and trail surfaces will eliminate roller blades. The Greenway will pass between the visitor center and the parking lot. This permits safe building and trail access into the valley without intersecting traffic. The Greenway will follow a landscaped trail to the existing driveway onto 31 W-Nashville Road where it will become a municipal sidewalk.



The Bowling Green Greenway will meander through the restored barrens area, skirting along the rim of the valley sanctuary.



With some clearing of vegetation, observation decks on the Parkway overlooking the blue holes will provide spectacular views.



A continuation of the Blue Holes Trail to the southeast would provide access to beautiful moss-covered limestone outcroppings and seasonal pools.



Steep trails from the current parking lot to the valley and from the valley to the Blue Hole #1 lower deck are highly susceptible to erosion. These should be removed.



Development of New Trails and Closure of Old Trails

The addition of land on the eastern end of the valley offers the opportunity to loop into the new Greenway Corridor. This new acquisition contains dramatic, limestone outcroppings covered with contrasting vegetation of soft mosses and sedges. It adds some exciting visual and textural elements to the valley habitats. A trail should be extended from the spring east and south of the private residential in-holding to the end of the valley where carefully engineered switchbacks will connect with the more formal Greenway. The trail should be built as far away from the residential property as possible for the betterment of aesthetics of both the trail and the residence. A gated trailhead should welcome visitors to the Lost River Cave and Valley at this intersection.

An additional trail should be constructed from the current location of the butterfly house to the proposed homestead and prairie barrens. This trail is needed to facilitate efficient movement of groups and visitors from one activity site to another in a circular series of trail loops that return them full circle to the visitor center.

A short loop nature trail through the restored barrens area (just above the current location of the butterfly house) will introduce visitors to the unique plant and animals species of a prairie habitat.

Two trails should be removed from the public traffic pattern. The first is the valley trail that passes under the bridge toward the cave. The other is the trail, with stainless steel handrails, from the parking area to the first blue hole. Both are contrary to the proposed traffic circulation, and each is an imposition on the site and subject to erosion.



Map Key

- - - - - Existing trails to improve/maintain
- - - - - Existing trails to remove
- - - - - Greenway/Ridge-top trail to develop
- - - - - New trails to develop in early phases
- - - - - New trails to develop in later phases
- Existing buildings/sites
- New or moved buildings/sites

**Lost River Cave and Valley Site Map:
New and Existing Trails**

This map details current and proposed trails that would enhance the visitor experience at Lost River Cave and Valley. All existing trails (red and purple) are included, with some segments recommended to be removed.

The Bowling Green Greenway Trail (in yellow) starts on Nashville Road and connects to Cave Mill Road on the southeast side of the property. Other new trails (blue and orange) are marked in terms of early and later phases of development.

Existing (white) and new (yellow) buildings and improvements are also included.



Lost River Cave and Valley Site Map: Trail Classes, Service Roads, and Gates

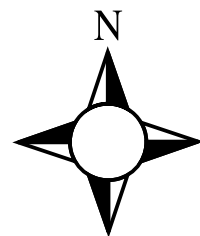
This map illustrates which trails should be improved and maintained as Class A Trails (orange) and which should be Class B Trails (light blue). Class A Trails are the most heavily used, which requires hard surfaces and universal accessibility. Class B Trails are secondary routes linking various experiences. A uniform surface (woodchips, crushed limestone, boardwalk) should be applied and the trails should be made accessible if possible.

Existing and proposed service roads (red) are also indicated. These are important for emergency vehicle access, maintenance, vendors, and catering.

Existing and proposed gates (purple) have been placed at appropriate intersections with roads and trails. If necessary, the entire valley can be closed to public access.

Map Key

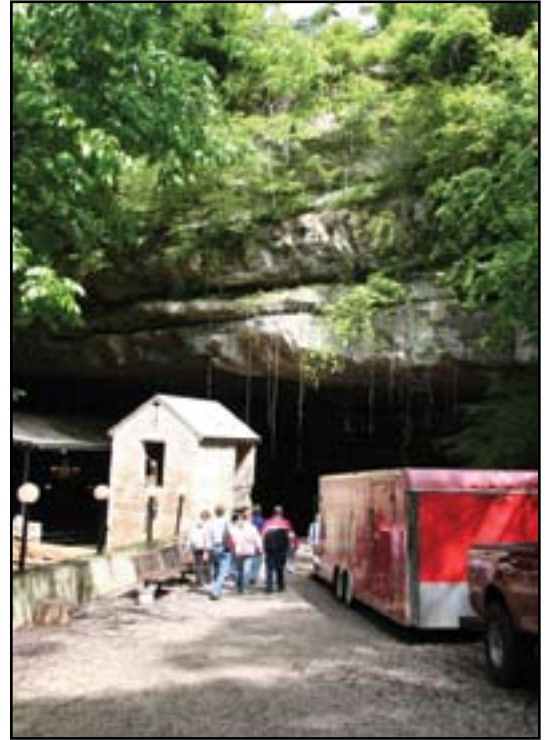
- ⋯ Class A Trails (hard-surfaced)
- Class B Trails (uniform surface)
- Service Roads
- ▭ Gates (existing and proposed)
- Existing buildings/sites
- New or moved buildings/sites



Service Roads

Vehicle access to the visitor center, administrative building, and most of the activity sites is a necessity. These roads should allow emergency vehicles such as fire trucks and ambulances access to public areas. In some cases trails will be built large enough to double as service and emergency routes.

In other cases distinct, non-public driveways will service sites such as the administrative building or the multipurpose room in the visitor center where vans might cater meals to groups meeting there. Service vehicles will need to replenish vending machines and inventory will need to be restocked from storage rooms in the administration building to the storage room in the sales area.



Current service drives, like this one that accesses the cave, are important for special events or emergencies. New service roads will need to be designated as the visitor center, trail system, and other facilities are developed.

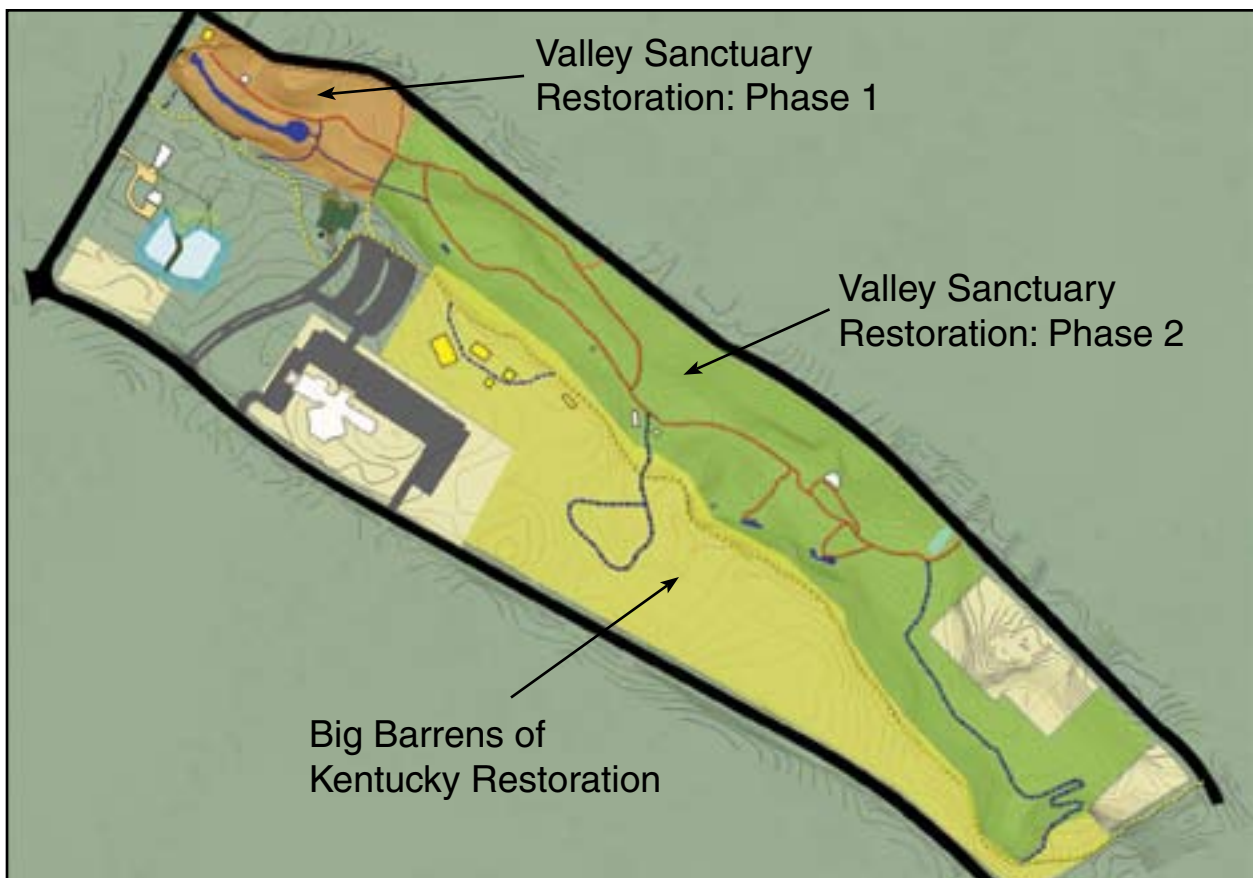
Restoring and Managing a Nature Sanctuary

The ridge-top and valley offer great potential as a nature sanctuary with flora and fauna representative of the forests and prairies of the Big Barrens of Kentucky. Restoration of these forest and prairie communities will require a major commitment to remove invasive vegetation and encourage native species.

These restored areas will attract Bowling Green nature enthusiasts who will enjoy seasonal trail walks and participating in guided nature activities. In return, they

should be willing and eager to provide the necessary labor required by this restoration effort.

These restored sanctuaries will provide added value to tourists interested in nature (a significant segment identified in the visitor survey) and for school field trips. Through this restoration effort and by offering nature programming, Lost River Cave and Valley could easily fill the Nature Center niche that is lacking in the Bowling Green area.



Valley Sanctuary

The valley is choked with exotic shrubs and vines that are out-competing the native wildflowers and tree seedlings. Removal of the exotics should be accomplished in two phases:

Phase One: Restoration of the primary use area from the Treetop Bridge to the cave entrance.

This will beautify the part of the valley that all visitors see and add to their enjoyment. Fortunately, this area has an excellent base of native wildflowers to build on and less infestation of alien exotics than the remainder of the valley.



A view of the valley from the ridge shows slopes carpeted with wildflowers.



Red trilliums



Toothwort



Twisted stalk and Solomon's seal



Jack-in-the-pulpit and wild ginger

Principle exotics in this area are euonymus (winter creeper), oriental bittersweet, and English Ivy. These pests can either be pulled by crews of volunteers or controlled with herbicides (care must be taken to avoid destroying natives). Herbicide treatment includes foliar treatments, cut surface treatments, or basal bark treatments.

Excellent information on control of invasive plants is available from the Southeast Exotic Pest Plant Council Invasive Plant Manual (www.se-eppc.org). Another informative website is www.invasive.org, a joint site headed by the USDA Forest Service. Several publications are available including "Nonnative invasive plants of southern forests: A field guide for identification and control."



Oriental bittersweet encircles most of the trees in this area.



Winter creeper is a solid carpet on the forest floor, strangling wildflowers.



Invasive shrubs choke out natives along the Blue Holes Trail.



Multiflora rose



Winter creeper (Euonymus)



Bush honeysuckle

Phase Two: Restoration of the valley along the Blue Holes Trail.

Eliminating exotics and planting native species will greatly enhance the Blue Holes Trail experience. Few native wildflowers exist in this area except around the blue holes. The blue holes and their associated wildflowers should be protected with the addition of boardwalks which will eliminate the muddy trails leading up to and around them. Invasive vegetation forms a dense understory throughout this part of the valley and removal will require a major effort. Bush honeysuckle, multiflora rose and autumn olive form an impenetrable shrub layer that chokes out native wildflowers and tree seedlings. The end result of their removal should be an open park-like environment.



The bluffs around blue holes create micro-habitats for native plants and animals.



Bluebells

Spring wildflowers bloom profusely on the bluffs around blue holes.



Spring beauty



Hepatica

Big Barrens of Kentucky Restoration

The acquisition of the open field along Dishman Lane offers an opportunity to re-establish the pre-settlement prairie vegetation typical of the Big Barrens of Kentucky. This restoration will provide a program link to the butterfly house and proposed Old Kentucky Homestead development and will provide nature enthusiasts an opportunity to see plants and animals (especially butterflies and birds) typical of this habitat. Since most of the native prairie was converted to agriculture, few remnants exist. This restoration will have scientific value to biologists at WKU and natural

history value to tourists, school children and the Bowling Green community. Limestone barrens of the Mississippian Plateau are listed as an “Endangered Plant Community of Kentucky” by the Kentucky State Nature Preserves Commission.

Schmeckle Reserve Interpreters accompanied Lane Linnenkohl of the Kentucky State Nature Preserves Commission on a tour of the site during which he offered suggestions for restoration. Lane also led a tour of Raymond Athey Barrens Preserve near Russellville to provide images of how the LRC&V site might appear after restoration. Rho Lansden accompanied us on this tour. Lane manages the Athey preserve and several others in the region. He has an office at WKU and can be reached at his e-mail address: lane.linnenkohl@ky.gov

In addition, Nick Crawford invited Joseph Ray of the Kentucky Department for Environmental Protection to analyze this site and provide recommendations for restoration. His report is appended in this document.

Principle Recommendations for the re-establishment of the Big Barrens of Kentucky:

- Re-establish Barrens vegetation in as much of this area as possible. A larger area will have the greatest benefit for wildlife and will offer the most esthetic result.
- Establish mowed trails as fire-breaks for rotational fire management and for easy access to the area.
- Rotational fire management should be used in alternate plots to suppress invasive vegetation. The unburned plots will serve as a refuge for insects, especially pollinating butterflies.
- Work with the city and neighborhood residents to alleviate concerns about the use of fire for periodic management of the Barrens.
- Establish a volunteer cadre to collect seeds of prairie plants in the local area. This will ensure



Lane Linnenkohl (*right*) of the Kentucky State Nature Preserve Commission offered Rho Lansden and Schmeckle Reserve Interpreters recommendations for the Barrens restoration.



Several acres of an old farm field are ideally suited for this restoration.



This cutleaf prairie dock, a prime barrens species, was photographed by Joe Ray on Russellville Road two miles from Lost River Cave. Prairie plants which are threatened with development should be transplanted to LRC&V.



The Raymond Athey Prairie Preserve near Russelville in early spring shows how the Lost River Cave site may look after restoration.



Prairie phlox



Hoary puccoon



Birds-foot violet

Shooting star



A diversity of colorful May wildflowers bloom in the Athey Prairie Preserve. Many others bloom throughout the summer.

that local genotypes will be used to restore this site.

- Establish a small greenhouse on-site to germinate and grow seedlings for transplanting to the site. This could be managed with the assistance of volunteers.
- Use selected chemicals to remove fescues planted for pasture grass.
- Consult with Tom Barnes at the UK Lexington Department of Forestry. He has much experience in the re-establishment of Kentucky Barrens on a similar site near Lexington. He will be able to specify chemicals that are best for eliminating alien species from this site. Contact e-mail: tbarnes@uky.edu
- Use the same chemicals for brush removal as those used in the valley. The cut surface treatment is the best choice here. Use saws and loppers to cut the multi-flora rose, privet, Russian olive, and bush honeysuckle that is invading this site and then treat the stumps with the appropriate chemical.
- Lespidiza, a member of the mustard family, is a major herbaceous invader and should be controlled chemically.
- Intersperse grass species with a greater percentage of forbs (herbaceous plants) so the grasses do not dominate.
- Consider employing a staff naturalist. This individual should be selected based on his or her knowledge of prairie and forest communities and their management. This person should also have knowledge of teaching and interpretation methods. Principle duties would include management of the forest and barrens communities and directing the nature education program (including the butterfly house). This person would be required to recruit and manage the large volunteer staff needed for this work.

Narrative Walk-Through

An idealized visit to Lost River Cave and Valley when all development phases are completed

A Michigan family with two children, a boy, 7 and girl, 12 and visit the Lost River Cave for the first time. They read about it in a brochure at their motel on I-65. The boat tour caught their attention. They follow the signs from I-65 to the entrance on Dishman Lane.

The driveway presents a clear view of the visitor center and parking area. A spinning waterwheel near the building draws them to the entrance. They pass silhouetted sculptures where the family poses for pictures. They enter the building eager to explore.

Sunlight from large entryway windows bathes the lobby and a friendly receptionist at a large service desk. The children and mother scatter into the well-stocked gift shop to the right of the service desk. The father pays the fee and studies a schedule board that lists the times for the next cave tours and living history demonstrations at the Old Kentucky Homestead and Cave Mill. The receptionist hands him a map and activity guide to the site. "Plan on spending a half-day" she says.

The mother vows to return later for some serious shopping. The family hears an announcement that the "Spirit of Lost River" will be playing in the theater in five minutes. As they hurry to the theater exhibits catch their children's eye. "Wow!" "Can we come back here after the show?"

In the theater, the family witnesses the pageant of Lost River Cave history as it unfolds in the surround sound rumble of a cave collapse, the discharge of guns by Civil War soldiers, the crackle of mill fires, and the romance of couples dancing in the cave nightclub. As they watch they are bathed in moist cave air and watch animated objects that are illuminated on-stage.



Entrance sign, driveway, and visitor center.
See pages 69-70.



Metal silhouette sculptures and water wheel.
See pages 112-113.



Information and sales desk.
See pages 62-64.



"Spirit of Lost River Cave" theater production.
See pages 114-117.



Civil War interior exhibit.
See pages 118-125 for all interior exhibits.



Large visitor center decks and roofed tour gathering area.
See page 72.



Lost River Cave boat and historic walking tour.
See pages 128-129.



Dance floor interpretive exhibits.
See pages 130-131.

Energized by the theater experience, they explore the exhibits. They listen to stories told by a Civil War drummer boy. They push a button to make it rain and trace the water flow in the Karst exhibit. The children explore the dark cave. The parents help the children understand the meanings of the exhibits.

With tour time approaching, they head to the viewing deck to meet their guide and enjoy the view into the forested valley. A group of 20 takes seats on the benches. Their guide arrives, greets and welcomes everyone, and sets the theme for the tour: Lost River and its cave and valley are windows into an underground world, providing glimpses of legends, human history and natural wonders. The group follows the guide as she tells stories of the blue hole, “shortest, deepest river” and cave that have attracted people throughout history.

Finally, with excitement, our family takes their seats at the back of the tour boat. They can easily hear the guide through the speakers mounted on the boat. They marvel at cave features and animals that are illuminated by the guide. On the return, they stop at a dock, disembark, and are led up stairways on the old “historic” cave walk. Here they see cave salamanders, crickets and blind crayfish up-close. They see the legendary “place” that Jesse James and Morgan’s Raiders might have hidden. They study a panel with photographs of Civil War smoke writings. The guide points in the direction of the chambers containing these writings and reads from a soldier’s diary. The group boards the boat and returns to the dock.

Lured by swing band music, our family crosses the river bridge to the dance floor. Pictures, music and touching human stories transport them back to the romantic era of their grandparents and great-grandparents. They are especially moved by the story of the couple who danced their first and last dance on this floor. In this cool cave entry, the family feels a kinship with the community that gathers here.

Before they stroll up the valley, the children run to the rail for a closer view of water pouring over the dam, driving a waterwheel. The wheel is geared to a spinning vertical shaft that goes through the cave roof to a mill.

The family follows signs to the mill above the cave where they are greeted by a “miller” dressed in 19th century costume. “You’re just in time for our milling demonstration”. The children join other families and help pour wheat and corn into the grinding wheel and watch as it is ground into flour which they help bag. “You can buy some of our Cave Mill flour when you go back to the visitor center” says the miller. After enjoying the milling activities they return to the valley.

Wildflowers and ferns carpet the open valley floor and birds sing from the treetops. They continue on the Blue Holes Trail where child-friendly signs interpret the plants, blue holes and quarry sites. Railed walkways take them to the edge of the blue holes where they gaze down into the bottomless water.

As they retrace their steps on the trail, they take a spur past an old powder house to the ridge top. The brochure map assures them they are on the trail to the Barrens, Butterfly House and Old Kentucky Homestead. They have just a few minutes before the next scheduled tour at the homestead.

At a log cabin door a “farmer’s wife” in an early 19th century costume welcomes them to the Kentucky Barrens. They join other families as our costumed interpreter takes them on a tour of the log cabin, farm buildings and gardens, spinning tales of life on the barrens. In the cabin they hear that a family of six shares these cramped quarters. “All the children sleep in that one bed” she says. “Your food comes from the garden and farm livestock. The children have to feed and care for the chickens and pigs. They even have to catch, kill and pluck the chickens for the Sunday dinner! Do you think you would like to trade places with these children?” (No!)



A miller grinds flour in a reconstructed grist mill. See pages 132-133.



Unified interpretive signage tells the story of Blue Holes. See pages 104-109 for signage recommendations.



Old Kentucky Homestead with costumed interpreters. See pages 134-135.



Inside the butterfly house, as part of the prairie experience. See pages 134-135.



Athey Prairie Preserve—restored barrens area. See pages 86-88.



Thematic gift shop area behind the service desk. See page 67.

They continue on the tour to the outbuildings and garden. They see an outhouse (“No indoor plumbing here!”), smokehouse, granary, tobacco shed and livestock pen all made from logs. In the garden, they see what tobacco and corn look like and feed grain to some chickens.

The guide points to the nearby butterfly house and prairie. “When farmers came to the Barrens it looked like this prairie. Abundant wildflowers attracted many kinds of butterflies.”

Inside the butterfly house they delight in the many kinds of native butterflies fluttering about. On the Barrens Trail they see many of these same butterflies visiting the native flowers. Interpretive panels describe how specific wildflowers are essential nectar sources for the adults and that other plants are essential for larvae to graze on.

Our family learns that the Kentucky Barrens was found in a broad band through Kentucky from Tennessee to Indiana and that it corresponds exactly to the Karst cave and sinkhole country! They also learn that the barrens had rich soils suited to farming. Most of the Barrens were homesteaded and now the prairies are very rare.

Ready for a break from touring, they head to the visitor center to use the bathrooms and buy souvenirs. There are items that relate to caves, the Civil War, milling, and Kentucky history.

With shopping bags in hand the family rests on the deck overlooking the valley where they purchase beverages and snack foods from vending machines and reflect on their adventure. “Before we go, there is one more stop” says the father looking at the map and activity guide.

Departing the building through the main entrance, the family walks to the tourist cabin near the old Dixie Highway. "Look at the old car!" says the boy as he runs over. "Oh, we can have our picture taken with those life-sized people" says the mother. They ask another tourist to take their family portrait with these 1930s "people".

As they explore the area they see the old gateway to the cave and interpretive panels with pictures that show the Lost River Cave tourist attraction during its heyday in the 1930s. Interpretive panels tell how Lost River Cave was always a favorite resting place on this road.

Tired but happy, our family walk to their car and drive back to their motel. "I know my sister's family would love to come here on vacation" says the mother. "We'll have to tell friends about this place!"



Tourist cabin and antique car.
See pages 136-137.



Historic cave entrance
and stairway

Chapter 6—

Interpretive Media and Experiences



Concept illustration of an interpretive exhibit in the Lost River Cave night club.



The goal of both personal interpretation (tours, presentations) and non-personal interpretation (panels, exhibits) is to connect people with the fascinating stories of a site.

The goal of interpretation is to connect visitors and community members to the meanings of the Lost River Cave and Valley. Someone who relates to a site on a personal level will have a positive experience, and is more likely to care for and support the area in the future. This chapter suggests methods for creating these connections based on the mission of the organization, the target audiences, and the tangible resources and intangible meanings.

Personal or active interpretation are experiences guided by an interpreter. Cave boat tours, guided walks, and presentations are types of personal interpretation.

Non-personal or passive interpretation are self-guided experiences that can be enhanced by interpretive media, such as exhibits, interpretive panels, kiosks, artwork, or brochures. The careful design of landscapes, trails, and facilities (Chapter 5) can also enhance the thematic connections between people and the site.

The different types of interpretation have distinct advantages and disadvantages, but a blend of personal and non-personal options will create the richest experience for visitors.

Developing Experiences

Visitors value “engaging, compelling and memorable” experiences. This media plan applies the eight “Keys to Staging Experiences” described in Chapter 3:

Create a rich portfolio of experiences, a series of related experiences that flow one from another.

A wide variety of experiences are proposed for Lost River Cave that build on the current offerings and that emphasize significant meanings at Lost River Cave and Valley.

Use experience hubs in locations where people naturally congregate.

Eight “experience hubs” are proposed:

1. Visitor Center
2. Orientation Hub
3. Lost River Cave
4. Dance Floor
5. Cave Mill
6. Blue Holes Trail
7. Barrens (and Butterfly House) and Old Kentucky Homestead
8. Early Tourists (tourist cabin area)



Experience hubs should be planned in places where people naturally congregate.

Create a flagship location, a singular place where you stage the very best, most dynamic experience.

The visitor center will have engaging audio-visual and exhibit experiences that set the stage for the other seven experience hubs. The cave boat tour is also a “flagship” experience.

Theme the experience. The theme must drive all the design elements and staged events of the experience toward a unified story line that wholly captivates the customer.

Unifying themes guide the development of interpretive media and experiences at Lost River Cave. These themes help visitors feel that they have gained personal insights into the significance of the site.

Harmonize impressions with positive cues.

Render the experience with indelible impressions.

Impressions are the “takeaways” of the experience, they fulfill the theme.

Examples of “harmonious impressions” include a media plan that unifies graphics and a building architectural program that recommends designs which harmonize with the landscape and themes. A site map rendered on panels and as a handout should guide visitors through the various experiences.



Power lines hanging in trees along the trail detracts from the visitor experience. An alternative lighting plan, like low level trail lights, should be considered.



Thematic merchandise in the gift shop are physical reminders of the site stories, while serving as an important source of income.

Eliminate negative cues. Ensure the integrity of the customer experience by eliminating anything that diminishes, contradicts, or distracts from the theme.

Develop a high-quality appearance from entry to departure—eliminate a “mom and pop operation” appearance. Phase out and replace activities like the climbing wall and sluiceway with experiences that relate to the theme. Professional panels should replace many hand-rendered signs. All extraneous objects such as the collection of old machinery along the overflow parking and power lines in the valley should be removed from the visitor’s line-of-sight. Landscaped walkways between hubs should be hard surfaced for accessibility and aesthetic appearance.

Mix in memorabilia. Certain goods have always been purchased primarily for the memories they convey, a physical reminder of the experience.

An expanded gift shop will offer more goods that are representative of the site themes. Items should be offered that relate to caves, the Civil War, Kentucky heritage, natural history and old mills.

Engage the five senses. The more senses engaged in an experience, the more effective and memorable it will be.

This is a prime consideration for all of the proposed media.

Evaluation of Existing Programs and Media

Evaluation of Cave Tours

The standard format for cave boat tours is successful and field tested. The strengths of the tours that we observed were due to the enthusiasm and the spontaneity of the individual guides. Each took “center stage” and maintained a friendly but approachable leadership position with their tour groups. Training is critical to this continued success.

Tour guides exhibited a good repertoire of story telling, use of humor, and questioning technique. They immediately attempted to establish rapport with their audiences as they introduced themselves and maintained a friendly, casual relationship, especially with children, throughout the tour.

All the guides that we observed appeared to be well versed on the facts of the cave. They all handled questions politely and addressed them well. They dealt with folklore, lies, and legends in thoughtful and unbiased ways, often referring to “local legends”. If they were uncertain about a fact they promised to check at the office and get back to the person with documented information.

There is a balance of facts, feelings, and sensory involvement on the tour. Most participants recall touching water, ducking their head as they pass through the opening, bats (if they saw one) and the generally fun attitude exhibited by their guide.

While most visitors express satisfaction with the cave tours, suggestions for improvement are offered by many. Nearly a third of the visitors that we surveyed expressed dissatisfaction with their ability to hear the guide during the boat tour. A smaller but significant number of visitors wished that the boat tours were



The friendly and personable approach of the tour guides, coupled with interesting facts and stories, results in a positive and rewarding experience for visitors.



Interpreting both inside and outside the cave is a diverse and holistic experience.



Most visitors thoroughly enjoy the boat tour. Some had difficulty hearing the guides inside the cave, while others wished to experience a longer boat ride.

“longer”. On busy days, many visitors expressed some impatience with the length of time they had to wait for their tour.

Most visitors’ expectations appear to be met by the cave boat tours. A few, relatively simple improvements, such as the installation of quality sound equipment, will go far toward satisfying the majority of visitor identified improvements. Creating a longer cave tour is a long term project that may require engineering solutions. We have attempted to offer alternative, programmatic options that should supplement the visitors total site experience without increasing the physical length of the cave portion of the tour.

Personal Interpretation Recommendations

Lost River Cave invests a considerable amount of time in training its tour guides in interpretive technique. These same skills and communication methods can be applied by the guides to other site activity areas. If a prairie, homestead and eventually a mill are added to the activities at LRC&V, they will require personal interpretation during peak visitation to be truly involving. The homestead and mill should be staffed by a costumed interpreter who is well versed in the facts and stories important to that site and era. Development of a volunteer cadre may be a worthwhile investment in the future.

The following are future considerations for personal programming:



Costumed interpreters, like this woman at Heritage Hill in Wisconsin, are an important part of living history programs. The Old Kentucky Homestead and restored Lost River Mill would be ideal sites for cultural presentations.

- Hire an interpretive naturalist/educator to manage the valley and prairie sanctuary and to train staff and volunteers for natural history programming in the butterfly house, prairie and valley sanctuaries.
- Develop costumed interpretive programs for the homestead and mill. The current staff can rotate between leading cave tours and providing these costumed programs.

Evaluation of Signage

A number of interpretive panels, wayside exhibits, and information signs have already been developed to encourage self-guided experiences. The following identifies strengths, problems, and recommendations for the existing media.

Stone interpretive signs:

Strengths:

- Material blends well with the limestone bluffs of the valley.
- Durable and vandal-resistant.
- Concise wording, interesting stories, some quotes.

Problems:

- A few signs are cracked and broken, giving an unkempt appearance to the site.
- Letters set all in caps are difficult to read when used for several lines.
- No images to tell the story.
- Expensive to replace if vandalized.

Green metal interpretive and direction signs:

Strengths:

- Very concise and readable message. Good contrast for viewing.
- Durable material that can be easily and inexpensively replaced if vandalized.
- Green color and white logo unify interpretive signs and direction signs. Provides an identity for the site.

Problems:

- No images to tell the story.
- Little space to tell a meaningful story or provide personal insights (quotes, metaphors, etc.).
- Vertical orientation works well for directions, but may be seen as a visual intrusion for interpretation.





Tree/Plant Identification signs:

Strengths:

- Identifies specific trees and plants, which some visitors value a great deal.

Problems:

- Three different types of identification signs give the appearance of not having a well-planned site.
- Wooden signs have a home-made appearance, which is not compatible with other more formal signs on site.
- Metal signs are difficult to read and have an “industrial label” look.
- Laminated paper inserts are weathered, reducing their effectiveness.
- No images to help in identification. Wooden signs have arrows that are difficult to follow.
- Although a few visitors value identification, some may see the signs as a human-made visual intrusion on the natural landscape.

Recommendations for signs:

- **Unify all interpretive signage** to create an identity for the site. Replicate materials, fonts, colors, and design elements on all signs. This plan offers recommendations for unified design standards.
- Future interpretive panels should follow the Seven Ways to an Effective Message.
- Use a **panel material** that is durable and vandal-resistant, while allowing the use of full-color illustrations and photographs to tell the story visually. High-pressure laminate is an inexpensive choice.
- Choose a **framing system** for interpretive signs that secures panels at a 30-45° angle. This reduces the visual impact on the site.
- **Unify all identification signs** with the same font and material. A simple line drawing or photograph will help visitors identify the correct species. Move identification signs to one part of the valley or a single trail to avoid visual marring.

Seven Ways to an Effective Message

1. **Say it visually.** Use photos and drawings to help tell the story.
2. **Graphics should do more than duplicate what can be seen.** They should reveal hidden meanings and ideas.
3. **Use a message pyramid.** Develop a descending order of message importance. This can be expressed as the **3-30-3 rule**. Visitors can receive a message in three seconds, thirty seconds, or three minutes.
4. **Keep the message short.** Use short sentences and paragraphs. Use a readability scale such as the Flesch test to help eliminate wordy phrases and paragraphs.
5. Create imagery with **concrete nouns and active verbs**. Limit adjectives and adverbs.
6. **Relate to the visitor's experience.** Use personal pronouns, personal language, and familiar terms. Illustrate with metaphors, analogies, quotes, and real examples.
7. **Provide for multi-sensory involvement.** Use digital audio repeaters and participatory devices. These may include tactiles, models, relief maps, flip panels, and interactives.

Recommended Color Palette



Dark Green: CMYK=75,48,88,56
Used for frames, tint boxes, and the headline bluffs. Provides effective contrast when combined with beige words. Can be blended to Light Green.



Light Green: CMYK=75,25,100,0



Beige: CMYK=8,8,41,0
Used in headlines and text in dark green boxes. Ideal background color if an image is not used. Less glaring than white.



Light Blue: CMYK=55,18,0,0
Complements dark green. Used for headline river and other components to attract attention. Can be used in conjunction with dark blue.



Dark Blue: CMYK=100,80,11,1



Black: CMYK=0,0,0,100
Standard color for text when placed on a beige or light image background.

Recommended Typefaces

Monotype Corsiva

This stylized font is simple and elegant, ideal for headlines and sub-headings. The flowing type is reminiscent of the river and old-fashioned romance.

Helvetica

This sans-serif font (without extra lines at the end of the letters) is readable and versatile. It would work well for longer lines of text.

Unified Design Standards

To enhance recognition and provide a holistic interpretive experience for visitors, all media should be graphically and visually unified. Incorporating standard colors, typography, and unifying elements will tie together different media components.

Colors

A standard set of colors help to unify media and evoke feelings about the site. Colors chosen to represent the Lost River Cave and Valley should be thematic with the interpretive stories and blend with the natural landscape. Gradients from a dark color to a lighter color help break up large spaces of a single color.

Typography

Each typeface has its own unique personality. Font styles used for the Lost River Cave and Valley media should be friendly, readable, and versatile.

For headlines and sub-headings, a stylized font like Monotype Corsiva adds character and evokes a sense of the romance associated with the cave and valley. The font is informal, flowing, easy to read, and friendly.

Although a stylized font works well for short headings, it does take more time and energy to read. Simpler standard fonts have less character, but can be read with little effort. The main text and captions should be a font like Helvetica. The type is a clean and neat sans-serif font that provides maximum readability.

Hierarchy

Media should be developed according to the “3-30-3 rule.” Most visitors will look at media for at least 3 seconds. The headline and graphics should tell a story for these visitors. Some visitors will look at a media for up to 30 seconds. The main text should be larger and quickly summarize the essence of the entire message. A few visitors will look at media for up to 3 minutes. More detailed stories, quotes, captions, and graphics can be included for these individuals.

A hierarchy of text sizes emphasizes the importance of different sections of text. Headlines are the largest, followed by sub-headings, main text, sub-text, captions, and photo credits.

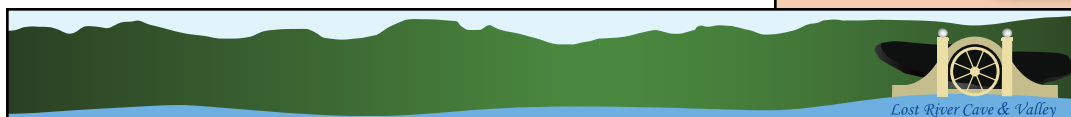
The typeface and size proportions should be unified for all interpretive media.

Unifying Graphic Elements

Certain graphic elements can be replicated on all media. The Lost River Cave and Valley logo, for example, should be clearly visible on interpretive panels, wayside exhibits, brochures, websites, and some interior exhibits. This provides a consistent identity for the site.

Other elements, like a thematic title bar made of green undulating bluffs and a blue curving river, may be unified across specific types of media—in this case, outdoor interpretive panels. Tint boxes, picture frames, picture shadowing, drop caps, and sidebars should also be replicated.

Grid systems can be designed for each type of media to unify text, graphic, and object placement. By using templates, new media can be quickly and easily developed, and old media updated.



Example: Text hierarchy for outdoor interpretive panels

Headlines

135 point font

Sub-Headings

52 point font

Main Text

48 point font

Sub-text

24 point font

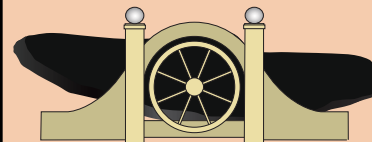
Captions

18 point font

Photo Credits

12 point font

Example: Unified graphic elements for outdoor interpretive panels



Standard logo in Title Bar

Lost River Cave & Valley

Images with dark green borders (8 pt) and shadows



Title Bar with green bluffs and blue river

Recommended Design Standards for Interpretive Panels

Based on the Unified Design Standards model, the following standards are recommended for all outdoor interpretive panels at Lost River Cave and Valley.

Panel Size:
30" x 20"

Typography

Color

Unifying Elements

Dark Green
CMYK=75,48,88,56
Gradient

Beige
CMYK=8,8,41,0

Light Blue
CMYK=55,18,0,0

Light Green
CMYK=75,25,100,0
Gradient

Headline:
Monotype Corsiva
135 pts, shadowed

Title Bar:
Bluffs and river

LRC&V Logo

Dark Blue
CMYK=100,80,11,1

Beige
CMYK=8,8,41,0



Main Text:
Helvetica, 48 pts, medium

Drop Cap:
Monotype Corsiva, 130 pts

Sub-Heading:
Monotype Corsiva
52 pts

Sub-text:
Helvetica
24 pts, medium

Images: 8 pt.
frame and shadow

Dark Green
CMYK=75,48,88,56

Side bar: Real quotes, stories, and legends

Gradient: Light Green top to Dark Green bottom

Interpretive Panel Fabrication and Installation

In addition to unifying graphic design elements, the panel materials and frames should also be replicated over the entire site.

High-pressure laminate (HPL) is a cost-effective material for full-color, durable outdoor interpretive signage. The panel is made of a high-quality plastic, which is resistant to vandalism, UV-fading, and other weather conditions. Panels can be fabricated in varying thicknesses—1/4" or thinner require a framing system while 1/2" or thicker are self-supporting.

Several nationally reputable companies offer this fabrication process. The products are warranted against color fading and delaminating for 10 years or more.

We recommend that outdoor interpretive panels at Lost River Cave and Valley are fabricated using **1/8"-thick HPL material**.

Aluminum frames and bases are recommended for installation of the interpretive panels. Powder-coated aluminum is impervious to the elements and protects the panels from being stolen. Neutral colors, like black or rust, tend to blend into the environment while showcasing and formalizing the sign faces. If a sign is vandalized, the frame allows for easy replacement.

According to the National Park Service guidelines, panels should be installed at heights and angles favorable for viewing by most visitors, including those in wheelchairs.

- Interpretive panels on site should be installed in frames at a 30° or 45° angle and at a height of 30-34" from the bottom of the panel to the finished grade.
- Vertical panels, like those in kiosks or attached to walls, should be 24-28" from the bottom of the panel to the finished grade.



High-Pressure Laminate panels are durable and produce vivid, detailed, full-color faces.

Fabrication Process of HPL panels

Digital layouts are printed on special paper impregnated with melamine resins, a harmless plastic that cannot be melted or reshaped after being molded once. The paper is pressed at a high pressure and temperature with phenolic resin layers (another type of plastic) and a UV-resistant overlaminate. The process fuses the layers into a strong solid core, similar to a countertop.



Aluminum frames and bases are attractive and durable. Setting the panel at recommended heights and angles ensures accessibility for the majority of visitors.

Unifying Panel Layouts

Design templates should be developed to unify interpretive panels at Lost River Cave & Valley, while providing the flexibility to effectively tell specific stories.

The “Windows to the Lost River” panel uses a faded image for the background. It would be placed adjacent to Blue Hole #1. Photographs and illustrations help tell the story.

Windows to the Lost River

Mysterious “blue holes,” like this one, have beckoned travelers since their discovery, spawning fanciful legends and stories. At these pools, the underground Lost River peeks above the surface.

What are Blue Holes?
Blue holes, or “Kartst windows,” are openings in depressions where the underground river is exposed at the surface. The Lost River Valley has four blue holes. You are standing at Blue Hole #1.

Why is the Water Blue?
As the Lost River erodes bluffs, tiny particles of limestone are suspended in the water. Sunshine reflects off of these particles and the water appears blue. After heavy rains, increased sediment turns the water green or brown.

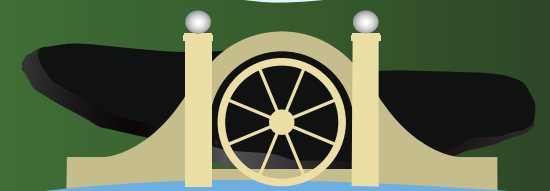
How Deep are They?
Early visitors believed that blue holes were nearly bottomless. Engineers from the L&N Railroad used a rope to measure one pool’s depth at 437 feet! Actually, blue holes are just a few feet deep! The rope was likely dragged downstream by the underground river.

Blue Hole Legends
Philadelphia Times
March 11, 1904
It seems like a pretty, harmless brook to a regiment of Union soldiers... the fellows were frolicking and splashing about in the cool shade, when suddenly there was a wild cry, a helpless wailing of arms, and one of the men sank from sight. A companion dived to his aid and never came to the surface again; a third met a similar death before the men realized that there existed a whirlpool beneath the placid surface of the brook.

There’s no evidence that anyone ever drowned in a blue hole. Legends like this, however, are exciting stories passed down from generation to generation.

Blue Hole #4 Blue Hole #3 Blue Hole #2 Blue Hole #1 Case Entrance

Windows to the Lost River



Lost River Cave & Valley

Mysterious “blue holes,” like this one, have beckoned travelers since their discovery, spawning fanciful legends and stories. At these pools, the underground Lost River peeks above the surface.

Photo courtesy of Schmeckle Reserve



Blue Hole Legends

Philadelphia Times

March 11, 1904

It seems like a pretty, harmless brook to a regiment of Union soldiers... the fellows were frolicking and splashing about in the cool shade, when suddenly there was a wild cry, a helpless waving of arms, and one of the men sank from sight. A companion dived to his aid and never came to the surface again; a third met a similar death before the rest realized that there existed a whirlpool beneath the placid surface of the brook.



What are Blue Holes?

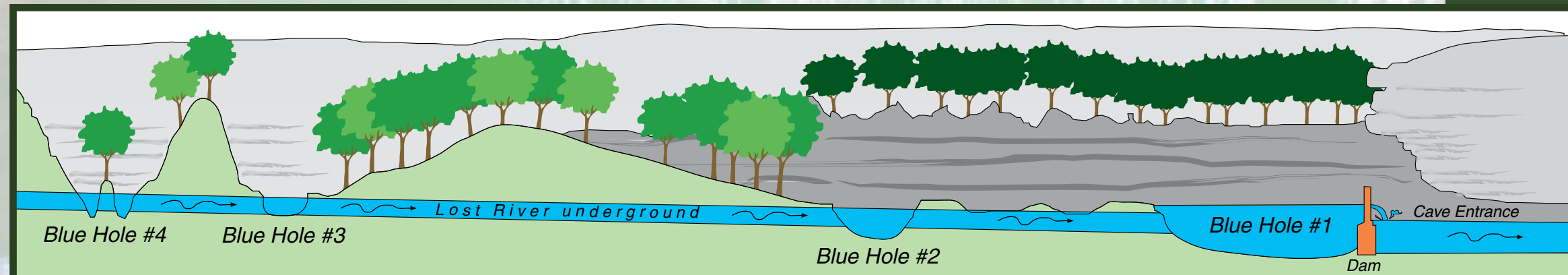
Blue holes, or “Karst windows,” are springs in depressions where the underground river is exposed at the surface. The Lost River Valley has four blue holes. You are standing at Blue Hole #1.

Why is the Water Blue?

As the Lost River erodes the bluffs, tiny particles of limestone are suspended in the water. Sunshine reflects off of these particles and the water appears blue. After heavy rains, increased sediment turns the water green or brown.

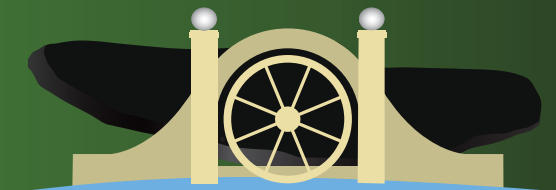
How Deep are They?

Early visitors believed that blue holes were nearly bottomless. Engineers from the L&N Railroad used a rope to measure one pool's depth at 437 feet! Actually, blue holes are just a few feet deep. The rope was likely dragged downstream by the underground river.



There's no evidence that anyone ever drowned in a blue hole. Legends, like this, however, make good stories that are passed down from generation to generation.

Tourists on the Dixie Highway



Lost River Cave & Valley



Dixie Highway

Highway 31W to your left is part of the Dixie Highway, which united North and South from Chicago to Miami. By 1927, two lines were completed. The west line followed the old Louisville-Nashville turnpike through Bowling Green.



People were so excited about the Dixie Highway coming through their town that they painted "DH" in red and white on poles, marking the way for travelers.



By the mid-1920s, automobile tourism was booming on new highways that spanned the country. Seizing the opportunity for their cave, E.L. and W. F. Perkins opened a roadside attraction that provided food, lodging, gasoline, and cave tours.



In 1930, Lost River Cave boasted of cottages with running water, food, and a 10-cent cave tour.

"Uncle Bill" (left) often guided early tourists through the cave, spinning fanciful tales as he went along.



By the 1940s, a gas station, museum, and 12 new tourist cabins were in operation.

Tourist cabins

The small cabin in front of you was one of 12 built here in 1935. At first, places to stay overnight were few and far between. Tourists pitched tents in fields or rented rooms from farmers.



In the 1920s and 30s, tourist courts with cabins sprang up along the highway. Duncan Hines, a traveling salesman from Bowling Green, wrote traveler's guides for food and lodging. "Recommended by Duncan Hines" was a guarantee of quality.

Tourists on the Dixie Highway



Lost River Cave & Valley

DH Dixie Highway

Highway 31W to your left is part of the Dixie Highway, which united North and South from Chicago to Miami. By 1927, two lines were completed. The west line followed the old Louisville-Nashville turnpike through Bowling Green.



People were so excited about the Dixie Highway coming through their town that they painted "DH" in red and white on poles, marking the way for travelers.



By the mid-1920s, automobile tourism was booming on new highways that spanned the country. Seizing the opportunity for their cave, E.L. and W. F. Perkins opened a roadside attraction that provided food, lodging, gasoline, and cave tours.



In 1930, Lost River Cave boasted of cottages with running water, food, and a 10-cent cave bus.

Local bar (left) often guided early tourists through the cave, opening broader later as he went along.



By the 1940s, a gas station, museum, and 12 new tourist cabins were in operation.

Tourist cabins

The small cabin in front of you was one of 12 built here in 1935. At first, pilots to stay overnight were few and far between. Tourists pitched tents in fields or rented rooms from farmers.



In the 1920s and 30s, tourist courts with cabins sprang up along the Highway. Duncan Hines, a traveling salesman from Bowling Green, wrote traveler's guides for food and lodging. "Recommended by Duncan Hines" was a guarantee of quality.

The "Tourists on the Dixie Highway" panel uses a solid beige color in the background, providing excellent contrast for text and historic photographs.

This sign would be installed near the tourist cabin and proposed antique car, highlighting the early tourism of Lost River Cave.

Experience Hubs Overview

Visitor Center

The “Gateway to the Lost River” exhibit at the entrance to the visitor center orients visitors to the building entrance, introduces themes, and sets expectations for a meaningful experience. The theater production and exhibits in the visitor center organize the visitor’s experience at Lost River Cave and introduce the themes that will be developed at the other experience hubs.

Orientation Hub

This hub orients visitors to all experiences on-site. Interpretive panels introduce visitors to the valley.

Lost River Cave

The cave boat tour is the primary attraction and will remain so. Reopening the historic walkway will allow visitors to see cave animals and limestone structures up-close and to walk in the footsteps of earlier tourists, Civil War soldiers and Native Americans.

Dance Floor

This interpretive exhibit tells the story of the cave nightclub and Big Band era. It provides a strong sense of place to the Bowling Green community.

Cave Mill

The mill above the cave provides the iconic connection to the original name (which Cave Mill Road still holds). The working grist mill demonstrates the early economic value of this underground stream. The levers and gears, the hum of water and grist wheels, and the smell of grain are a sensory experience for visitors.

The Blue Holes Trail

The valley with its springs, blue holes, and exposed limestone is a classic example of an oasis in the dry Karst landscape of Warren County. The abundance of water and plant life makes it a refuge for birds and other wildlife and a great place for people to stroll through a park-like environment during mild weather. Native vegetation should be encouraged, exotics should be removed, and the trails should be refined. Maps, directional signage, and trail surfacing will entice more visitors to explore the valley. Well-constructed boardwalks and overlooks will enhance the importance of blue holes and scenic cliff overlooks.

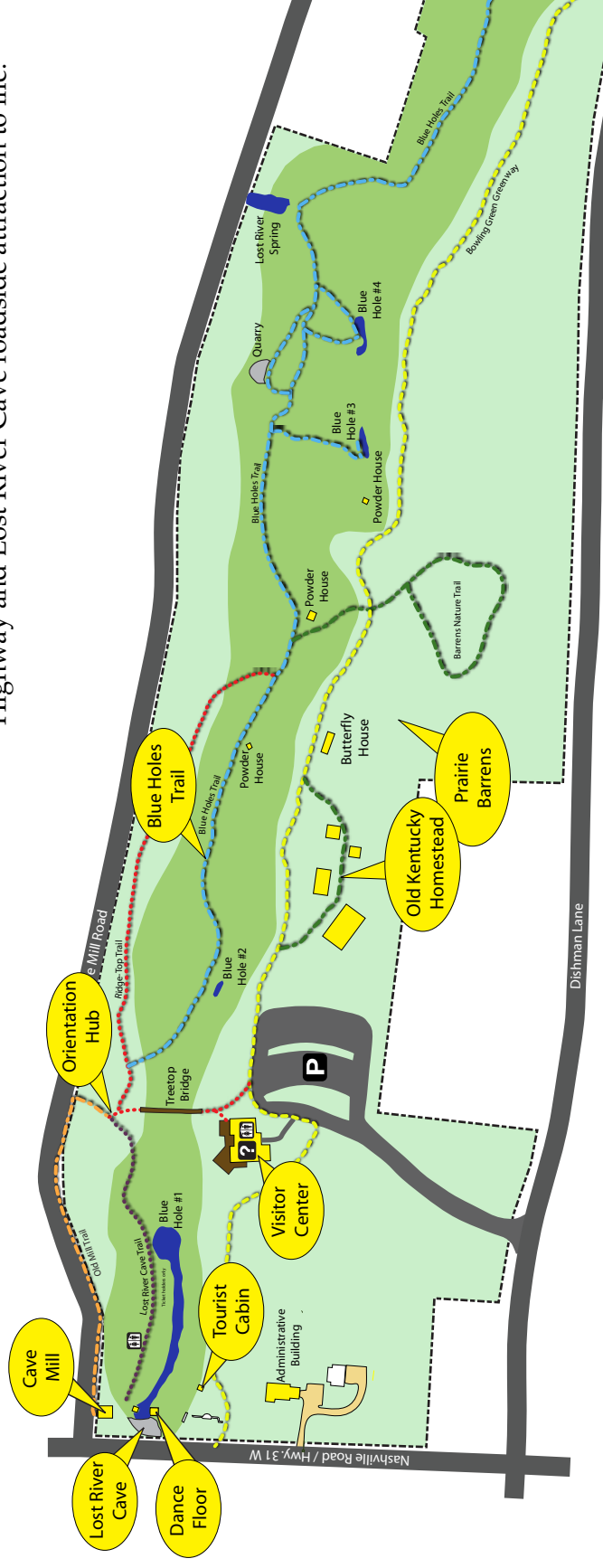
Some carefully placed panels and labels will interpret the plants, animals and geologic and historic features of the Blue Holes Trail. This valley walk has the potential to be a high quality, passive experience that will compliment the other activities at the Cave.

This experience hub is described in Chapter 5, “Wayfinding and Trails.” “Windows to the Lost River” (previous page) is an example of an interpretive panel that could be placed at the blue hole.

Prairie Barrens (and Butterfly House) and Old Kentucky Homestead

The prairie barrens and homestead above the valley provides a contrast to the moist, cool ravine. A trail through the “Big Barrens of Kentucky” prairie restoration introduces this critically endangered plant community. Panels and labels will interpret the barrens and the connection to the butterfly house. Native butterflies are essential pollinators of prairie wildflowers.

The Old Kentucky Homestead takes visitors back to early farm life on the Big Barrens. The rich prairie soils allowed



Bowling Green to prosper before the Civil War. The log buildings and the hands-on experiences at this hub will engage visitors and school children alike.

Tourist Cabin and the Automobile Era

The tourist cabin with associated interpretive features is a link to the romantic era of the “Good Roads Movement” when the automobile and the open road loomed huge in changing the face of America. The historic tourist cabin, a vintage car, and interpretive panels will bring the era of the old Dixie Highway and Lost River Cave roadside attraction to life.

Visitor Center Experience Hub and Media

Media at the Visitor Center Experience Hub will provide opportunities for interaction and learning while visitors wait to take a tour of cave or during inclement weather. The hub introduces the broad thematic stories of the Lost River Cave & Valley and prepares visitors to encounter the site first-hand. It is a gateway to the outdoor experience.

Gateway to the Lost River

Purpose:

This exhibit at the entrance to the visitor center orients visitors, introduces themes, and sets expectations for a meaningful experience.

Description:

As visitors park their cars, a mill water wheel attached to the building attracts their attention to the main entrance. Water flows under the wheel and spins it, reminiscent of the actual mill wheels used in Lost River Cave. The water meanders in a stream next to the entrance walkway, drifts under a bridge, and ends in a pool “blue hole” from which it is re-circulated. The moving water is attractive to visitors and wildlife.

Along the stream stand iron shadow sculptures artfully displayed to represent the people of the past who have important connections to Lost River Cave. Included are a pre-historic Native American, a pioneer farm family, a miller, a civil war soldier, and a couple dancing.



Metal person silhouettes, like this one in Bicentennial Park in Joliet, Illinois, artistically illustrate the history of a site. The sculpture conveys a sense of realism, but is abstract enough that visitors fill in the details.



A moving waterwheel beckons visitors toward the front door of the interpretive center. A stream flows out from beneath the wheel and empties into a "blue hole" pond. Several full-size metal silhouettes visually describe the fascinating human history of the Lost River Cave and Valley. The wheel, stream, and silhouettes also provide ideal opportunities for photographs.

“The Spirit of Lost River” Theater Production

Purpose:

This dynamic, sensory theater experience engages visitors in the saga of Lost River Cave. It appeals to all ages emotionally and intellectually and wholly captivates them. This audio-visual-experiential production is the most effective way to bring this complex story to life. Vast time spans are condensed into lively and comprehensible segments.

This production organizes the on-site experiences and stimulates visitors to participate in these new adventures. The long wait time for cave tours creates an opportunity to prepare visitors to more deeply appreciate and understand the rich stories of the cave and valley in an experiential format. This theater adventure will itself become an attraction that visitors will seek out.

Themes and Messages:

Since this production tells a comprehensive story of Lost River and Cave, all themes and many of the messages are addressed.

Objectives:

People will learn:

- The broad sweep of geologic and human history of Lost River Cave.
- That Lost River Cave is representative of the history of the Karst region and Kentucky.

People will feel:

- A connection to the great historic events that have occurred at this site.
- Enthusiastic about the boat tour.
- A connection to the people who have entered this cave before them.

- Excited to share this meaningful experience with family and friends.
- Residents will feel pride and a strong sense of place.

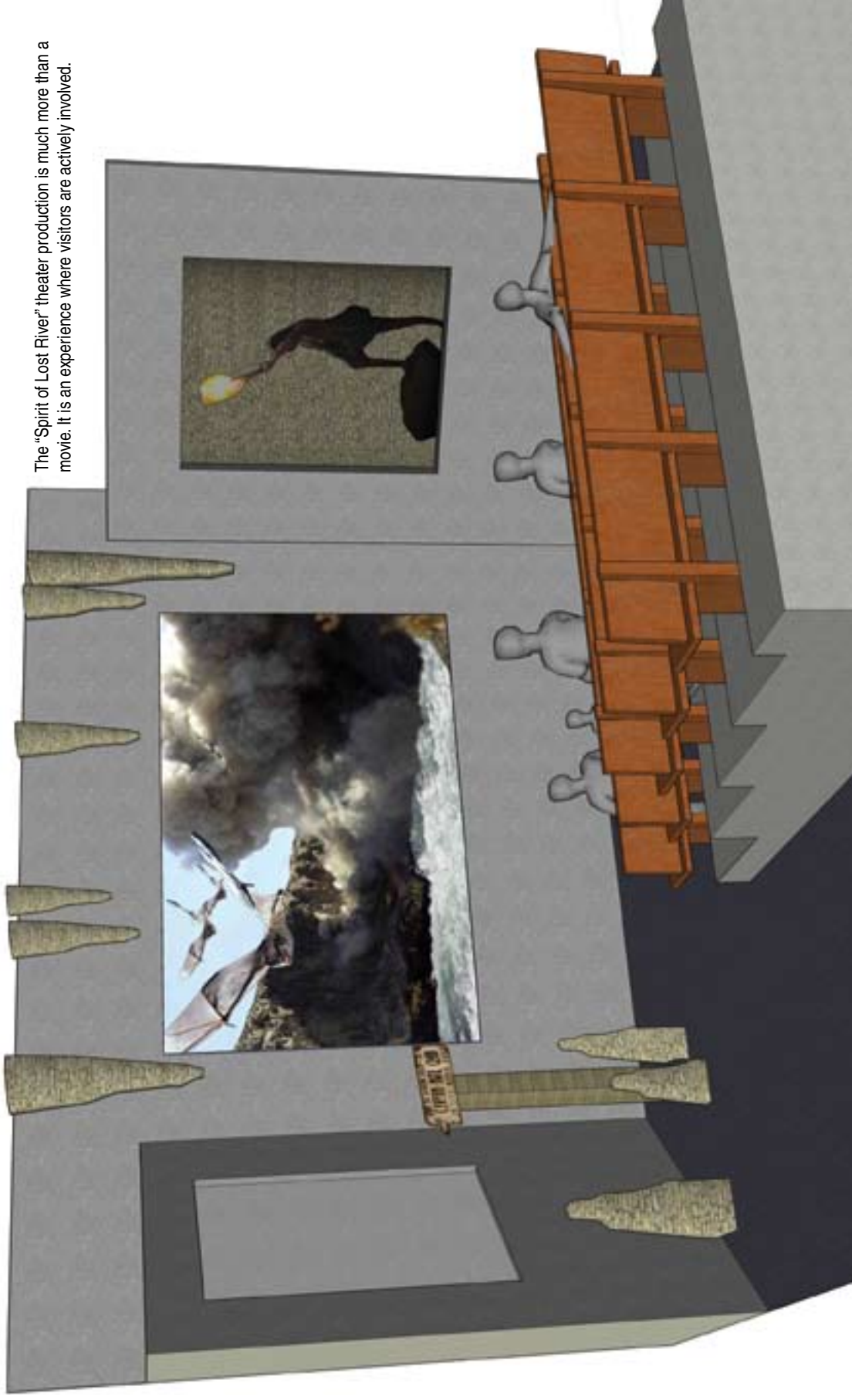
People will do:

- They will be motivated to participate in other experiences offered at Lost River Cave.
- They will be motivated to participate in the media at all Lost River Cave interpretive hubs.

Object Theaters are dynamic presentations that blend moving pictures and audio with real artifacts and objects artistically revealed during the presentation. Special effects, such as surround sound, colored lights, opening curtains, vibrating seats, and misters help bring the production to life.



The Home Place Minnesota object theater in the Minnesota History Museum is often the top experience of visitors. Rooms rotate into view with different furniture appropriate to the era, the roar of a train rumbles under your seat, and candles flicker above a mining cart. A mesh scrim hides objects when theater lights are on, but reveals them when lit from within. The theater is much more than a movie—visitors are actively engaged throughout the 20-minute presentation.



The “Spirit of Lost River” theater production is much more than a movie. It is an experience where visitors are actively involved.

Visitors are introduced to the Lost River story by watching a dramatic cave collapse, hearing loud rumbles echoing through the theater, and feeling vibrations in their seats and spritzes of mist.

After the introductory scene, the theater turns dark and quiet. A flickering cane torch reveals shadows of the first people to enter the cave system.

Description:

Prior to touring the site, visitors are invited to the theater to experience this twenty minute production that prepares them for their visit. The twenty foot high theater seats sixty adults on bench risers. The room has a cave-like ambience with stalactites and stalagmites clustered along the walls and around the screen. Cave animals are hidden in limestone niches to be highlighted during the show. Other life-sized vignettes of history are hidden behind scrimms to be brought to view during the show.

The audio-visual presentation features a high-definition digital projection system with surround sound. The bench seating rumbles in synchrony with sub-woofer speakers. Vapor mist is emitted with dripping water sound effects to simulate the passage of time and to create the sensation of being in a cave.

Highlights of the Theater Experience:

As the house lights dim, the steady sound of dripping water builds into the rushing flow of an underground river. You hear and feel a deafening rumble and see an animation of the cave collapsing into today's valley. A mist washes over you.

A cane torch blazes to life near the screen and shadows of ancient Indians dance on the cave walls before you. You hear their voices and see cave features and cave animals illuminated by their torches. A "bat" on a wire flies out into the theater and returns to a perch to the side of the screen.

Share the fear and excitement of the Confederate and Union Troops as they explore the cave and prepare for battle. You are startled by a muzzle flash and hear the echo of ricocheting bullets around your head as curious union soldiers shoot

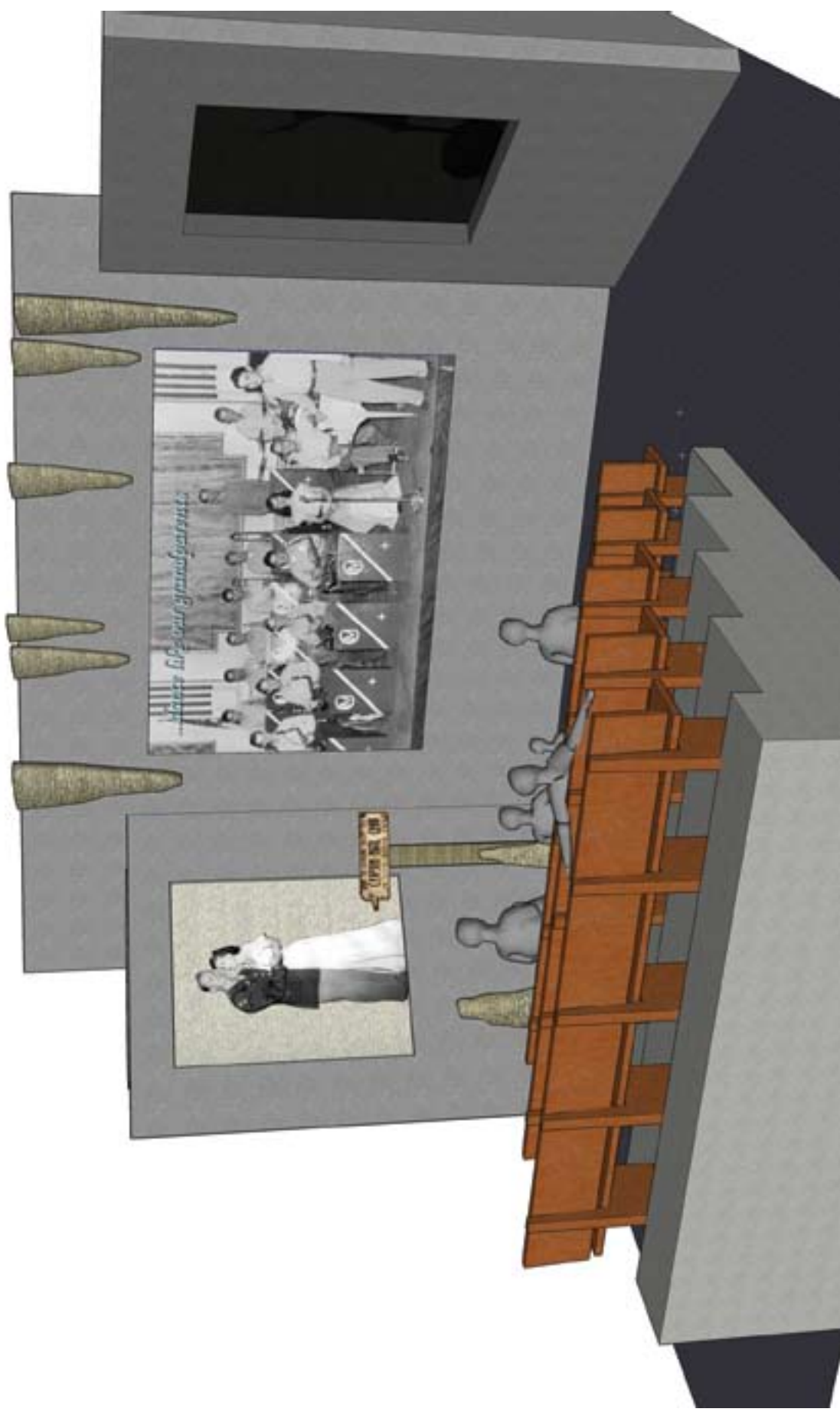
their guns into the cave. A soldier is illuminated by a candle to the side of the screen as he writes his name in smoke on the ceiling.

You hear and feel the vibrations of water cascading over a dam. This sound blends with the grating and grinding of a mill stone turning under a spotlight to the side of the screen. A miller on the screen describes the operation of the old grist mill which in turn is drowned out by the crackling blaze that consumes the mill and illuminates the theater.

Caravans of rattling farm wagons with the clattering of hooves pass over the cave on the tumpike. To the side of the screen an illuminated toll gate keeper takes 10 cents from each. These sounds and images slowly merge with model A's bustling down the Dixie Highway during the "roaring twenties". The automobile comes to the cave and so do roadside attractions and tourism. Historic photos, period radio sounds and quotes bring to life the heyday of "cappers", show caves, tourist camps and nightclubs.

Refreshing air engulfs you as it seemingly rushes out of the cave mouth to cool happy couples as they twirl and dance to the sounds of 1930s swing bands. Famous singers and bands perform on stage.

You have witnessed the pageant of history as it unfolds in the rumble of rock, the crackle of mill blazes, and the romance of couples who danced their first and final dances together in the ballroom of the Lost River Cave. As the music fades you hear a brief account of the story of how the cave was saved for future generations, "so that we can dance on the ballroom floor like our grandparents did." You are then invited to discover the cave and valley for yourself.



Swing band music, laughter, and chatting wafts through the theater, as though visitors are in the middle of a dance floor. Visuals of bands and dancing flash on the screen.

A real "Cavern Nite Club" sign is illuminated by a spotlight. Lit from within, a 1940s couple dancing appears behind a scrim. A rotating table adds motion to the experience.

Living in Karst Country

Purpose:

This exhibit is an interactive wall that invites visitors to explore a cross-section of the Lost River watershed with underground cave system. It offers the opportunity to “see” what lies underground and develops an understanding of the problems of living in Karst country. Limestone geology is interpreted.

Themes and Messages:

Sub-Theme 1, all messages

Objectives:

People will learn:

- That Karst Country is a type of terrain where slightly acidic groundwater has dissolved limestone to form an intricate underground drainage system.
- The Lost River is fed by a large area around Bowling Green by water draining into sinkholes.
- That living in Karst Country requires diligence by all residents to prevent pollution, and caution must be taken in locating and constructing roads and buildings.
- That limestone and dolomite have their origins in shallow Mississippian seas when Kentucky was located at the equator.

People will feel:

- Fascination and surprise while interacting with the Karst wall drainage system.

People will do:

- Turn on a rainstorm and visually observe the movement of water through the simulated Karst underground.
- Manipulate and touch the Karst wall.

Description:

Living in Karst Country is a large, 8 ft. high X 15 ft. wide wall that shows a cross-section of the cave system underlying Bowling Green. On the surface are miniature urban and rural building structures interspersed with sinkholes. Spray heads are positioned above in simulated clouds. Under the surface is simulated limestone with a system of vertical and horizontal waterways that flow under the city, into the Lost River valley blue holes and cave, and eventually into the Barren River. Major geographic features are labeled. Clear plastic pipes of increasing sizes transport water through the system.

Visitors interact with this wall by turning a valve to make it “rain”. They trace the flow of real water as it splashes and drains to the Barren River. A recycling pump system is hidden from view. A series of buttons are placed with graphics representing various types of pollutants. Each button triggers a light cable that begins at the source on the surface and shows the flow of these pollutants through the system. Examples include feedlots and leaky septic systems, industrial sources, backyard chemicals, and used motor oil. Another button triggers a collapse of a house and road into a cavern (it resets automatically).

The wall has an interpretive rail at its base that provides graphics, text, tactile and interactive devices. On the floor against the wall are large slabs of limestone that can be touched. One section of the reading rail has a map of the globe during the Mississippian era 350 million years ago. Kentucky is located at the equator on the map. Fossil animals such as crinoids and clams are embedded adjacent to this area. An illustration of sea life typical of this era (sharks, crinoids, clams) accompanies the fossils. The forces creating limestone and caves are illustrated (deposition, uplift, dissolution).

Another section of the rail poses questions that examine how we can live in Karst country and protect the system that provides our drinking water, feeds our waterways and

provides habitat for unusual underground animals. Flip devices reveal the answers in a graphic format.



Discovery Cave Walk (Troglophile Walk)

Purpose:

This simulated cave walk allows visitors to use their senses as they discover “cave critters” and other cave features that would probably not be seen on the boat tour. Children are offered adventures such as the opportunity to crawl into niches and see things that “big people” can’t.

Themes and Messages:

Sub-theme 2, all messages

Objectives:

People will learn:

- That many highly specialized creatures and unique features are found in caves.
- Cave life is very dependent on our terrestrial world.

People will feel:

- Involved in an exciting exploration of creatures and features on the cave walk.

People will do:

- Linger in the simulated cave and share discoveries with others in their group.
- Children will enter crawl spaces especially made for them.

Description:

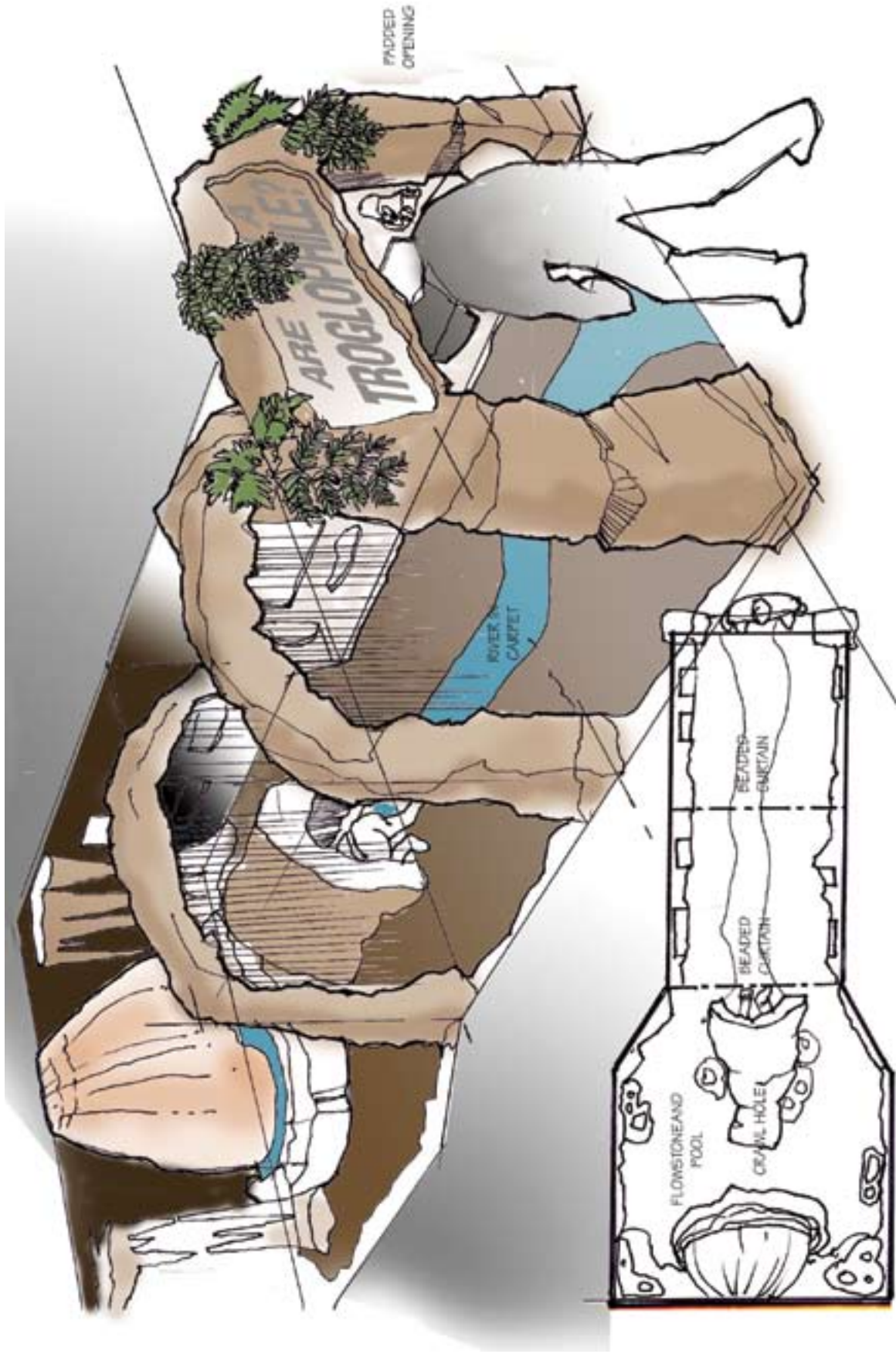
The cave is entered through an opening in limestone. The walking surface is a simulated river. A sign above the entry says, “Are you a troglophile?” The size of the opening (five feet) requires adults to stoop. Plastic ferns and other plants hang over the padded opening. You enter a cavity (about five feet x five feet with a domed roof that adults can stand in) that represents the lighted zone. Typical troglouzene (cave

guest) animals such as raccoons, birds and snakes are found in niches. The animals are life-sized molded reproductions. When you walk by them, a panel lights up and the animal (with a photo of the real animal) explains in the first person what they are and why they are in the cave: “Hi, I’m a raccoon...”

From the lighted zone you pass through a beaded curtain to the twilight zone. You enter another five foot x five foot domed room. Typical troglouzenes (cave lovers) such as cave salamanders, cave crickets and cave spiders are found in niches. These are molded models of these animals. Again, a light reveals a first person interpretive panel. The panel also explains what a troglouphile is, answering the question over the cave entrance.

Another beaded curtain leads you into a twenty foot long x ten foot wide cavity. The only light is provided by small spotlights that shine on niches with bats and true cave dwellers (troglouzenes) such as blind cave fish and blind crawfish. These are also molded reproduction animals that have light-up interpretive panels.

The center and side walls of the space have weakly lighted features such as stalactites and stalagmites, flowstone with pools and other features. The pools are where crawfish are discovered. All features are labeled. Children crawl through a portal under the center columns and there is one crawl space at the end from which they pop up into the exhibit hall. When you are ready, you exit back out of the cave the same way you came in.



The Great Civil War Oasis

Purpose:

To tell the story of Civil War soldiers who camped at Lost River Cave from 1861 to 1863.

Themes and Messages:

Sub-theme 6 and all messages

Objectives:

People will learn:

- Why Lost River Cave was a favored Civil War campground.
- That Confederate soldiers camped here from Sept. 1861 to Feb. 1862 and that Union soldiers camped here in 1862 and 1863.
- About specific soldiers who wrote about the cave in their diaries and inscribed smoke messages in the cave.

People will feel:

- A connection to these men who were soon to march into battle.
- The emotions that are expressed in soldier’s writings.

People will do:

- Page through the diary entries, photographs and illustrations of soldiers who camped at Lost River Cave.
- Sit on an oak barrel and peer into a tent to view a video of a Union re-enactor telling a first-person story about a soldier’s life at Lost River Cave.
- Come back to Lost River Cave during Civil War re-enactments. Visit other nearby Civil War sites.

Description:

This exhibit is a replica campsite with a painted mural backdrop that illustrates how the Lost River Cave campsite

might have appeared. It is a darkened scene indicating it is night. Many campfires glow on the mural around a large group of tents. Night sounds, like crickets, horses, muffled sounds of men talking and playing harmonica and jaw harp fill the space. In the foreground is a Civil War style wall tent. In front of the tent is a simulated campfire with glowing embers and an iron pot support. In front of the campfire are oak barrels small enough to sit on. Spotlights illuminate the barrels. Near the wall, replica guns are stacked with their bayonets facing upward. Hanging from them are a canteen and a Union cap.

When you walk up to this vignette you trigger a video inside the tent (a rear-projection onto a scrim, the night sounds fade). It is the image of a Union drummer boy, about age 10, dressed in uniform. You sit down on the barrels and listen to him tell about interesting things he has seen at Lost River Cave. With a candle he demonstrates how some men wrote on the ceiling of the cave.

To the sides of this exhibit, interpretive rails tell the story of Civil War soldiers at Lost River Cave. Old Harper’s Weekly maps and articles are displayed on one which explains where the Confederates had their camps and gun emplacements and the movements of Union soldiers as they marched into Bowling Green. Another panel has a map of where the Union regiments that camped here came from and where they fought in the Civil War and includes photos of famous generals who stayed here. Copies of a “diary” are available to be leafed through and read. It is a compilation of diary entries, photos and illustrations of men who camped here.

Suspended over the interpretive rails are large vertical panels with pictures of soldiers and quotes from their diaries about their stay at Lost River Cave. Pictures of their cave writings are also shown.



Believe It or Not!

Purpose:

During its heyday in the 1930s, Lost River Cave lured tourists from the Dixie Highway by trumpeting local legends about the cave and curiosities displayed in the museum. This flat-work exhibit presents the facts behind local legends associated with Lost River Cave. This is a take-off on Robert Ripley's "Believe it or Not!" and one of the legends is his claim that the Lost River is the "shortest, deepest river in the world". Other legends and curiosities are that the Jesse James gang and Morgan's raiders used the cave as a hideout; people and horses disappeared into the river never to be seen again; and "The Man Who Turned to Stone" and "The Man Who Turned to Leather" that were exhibited in the museum.

Themes and Messages:

Sub-theme 6: 6.6, 6.7, 6.8; sub-theme 7: 7.5

Objectives:

People will learn:

- Local legends about Lost River Cave.
- The facts about these local legends.

People will feel:

- Amused by the cartoons and depictions of the legends.

People will do:

- Lift the flip panels to get the "facts" about each legend.

Description:

This flat-work panel uses graphics and cartoons reminiscent of Ripley's "Believe it or Not!" The five legends are presented with a cartoon, drawing or photo accompanying each. Beside each legend is a flip board with the words inscribed, "Believe it or not!" When the board is raised, the facts are presented that either support or refute each legend.



Saving Lost River Cave

Purpose:

This flatwork exhibit in the lobby of the visitor center honors all those who contributed to saving Lost River Cave and valley and those that contributed to the development of LRC&V as a community resource and tourist attraction.

Themes and Messages:

Sub-theme 8, 8.1-8.4

Description:

A wall sized image of the cave entrance frames this memorial to those dedicated individuals who “saved the cave”. Photographs of people and activities dramatically document a community reclaiming its cave and heritage.

Viewers are challenged to be “troglaphiles—cave lovers” and contribute to the efforts as a volunteer or benefactor. Levels of contribution are recognized by cave animals: Spiders and crickets are one level; salamanders and cave crayfish are another level; and bats are the highest level. Contributors names are added to the appropriate list.



Orientation Hub and Media

Purpose:

This orientation hub serves as the trailhead for the Blue Holes, Cave Mill, Barrens and Kentucky Homestead, and Lost River Cave Trails. An upright trailhead panel has a map and descriptions of activities that can be experienced at Lost River Cave and Valley. Low profile panels interpret features of the areas. This hub is landscaped aesthetically for visitors venturing out on the trails.

Themes and Messages:

Sub-theme 1: 1.2, 1.3, 1.8, 1.9; sub-theme 3: 3.7, 3.8

Objectives:

People will learn:

- That the Lost River valley is a collapsed limestone cave with a series of blue holes where the Lost River is exposed at the surface.
- The area of the watershed that feeds the Lost River and where it goes after disappearing in the cave.
- Common spring wildflowers that can be seen along the path to the cave and around the blue holes.
- Common trees of the valley.
- Common birds that nest and rest in the valley and their seasonal comings and goings.

People will feel:

- That they have a better overview of the geologic, hydrologic and biologic systems of the valley and where they can go.
- Assured that the trail system is a quality experience and comfortable to explore the site on their own.

People will do:

- Observe the trees, wildflowers and birds in the valley.
- Walk the valley on the Blue Hole Trails.

Description:

Three panels with large graphics interpret the Lost River valley. These panels are located at the hub facing a view of the blue hole and cave. They offer important information about the valley to visitors venturing out on the trails. The low-profile interpretive panels use graphics, tactile elements and photographs with minimal text.

“The Lost River and Valley”, illustrates the collapse of the cave to create the valley and the entire Lost River watershed from the headwaters to the Barren River. The panel uses a three dimensional tactile model of the valley for illustration. This interpretation of the valley, blue hole and river that can be seen from this viewpoint reinforces the ideas presented in the visitor center exhibits and video.

“Plants of Lost River Valley”, interprets the common trees and spring ephemeral wildflowers that can be seen on the walk to the cave. Three dimensional tactile leaves and seeds accompany the descriptions.

“A Sanctuary for Birds” interprets the common resident, seasonal migrant and seasonal nesting birds that can be seen in this designated bird sanctuary. An audio device plays common bird songs.

Trailhead and Orientation Panels

This trailhead introduces and describes all activity venues at Lost River Cave and Valley. A color-coded map directs them to the cave, mill, and Blue Holes Trail. The Blue Holes Trail connects the valley to the ridge-top experience hubs, like the Barrens, Butterfly House, and Old Kentucky Homestead.



This is a natural orientation and gathering site at the end of the bridge. It offers an opportunity for people to rest and organize their visit.

Asphalt surfacing is often seen as utilitarian and unaesthetic. Paving bricks would be a better option. Landscape plantings can also be used to soften the outline. A roof is desirable to protect people from the elements.

The current trailhead to the valley is confusing. The Blue Holes Trail is obscured with little line of sight into the trail.

Orientation maps, interpretive panels, an obvious focal point trailhead, and well-defined and surfaced trails are needed to prepare visitors for their on-site experiences.

Lost River Cave Experience Hub and Programs

Purpose:

The boat tour is the main attraction to Lost River Cave. However, many people express disappointment that it isn't longer and that it is difficult to hear the guide from the back of the boat (31% in the visitor survey reported they could not hear). The reopening of the historic walkway into the cave would add value to this experience and increase visitor satisfaction. Another alternative is to extend the boat tour deeper into the cave.

Description:

A newly constructed boat ramp next to the flowstone formation could access historic stairs that lead to an old walking path. These stairs could be restored and a loop trail developed along the back of the cave. An interpretive panel with photos of Civil War cave writings would illustrate what lies beyond. (Special tours to the cave writings could be scheduled for an additional fee). The trail offers the opportunity to see blind crayfish, cave salamanders, pipestrelle bats, and cave crickets.



Restored stairs leading to a cave loop path would increase the length of the tours, give visitors a different perspective of the cave (from up above), and provide opportunities for up-close encounters with cave wildlife.



Investing in a quality sound system would solve the hearing problem. Digital and Audio Technologies, a company in Montana that specializes in interpretive audio solutions, was contacted regarding a boat speaker system. Their recommendation was to contract with a local audio company that specializes in outdoor installations. They said, "Equipment isn't the biggest factor. Waterproof sound systems are available. The biggest factor (60% of the solution) is speaker installation and placement and training the tour guides in how to use it. For example, keeping the microphone about two inches from the speaker's mouth makes a big difference in gain vs. feedback." A review of potential companies in Bowling Green led to Poston Electronics, 75 Broadway, 842-3122. Mike Cornelius is the representative. Another company in Nashville, Audio Visual Technologies, does work with Western KY University. Their representative, Mike Ragan, said that "Moisture shouldn't be a factor. All-weather equipment is available." He can be contacted at 866-279-3152, mragan@aviinc.com.

Another alternative is to use a headphone system like the Group Tour™ System from Antenna Audio. A system for two boats (2 transmitter/microphones and 30 receiver/headphones) would cost \$5,500. However, the limitation of this system is that visitors will need to remove their headsets to hear natural cave sounds. The regional representative for Antenna, Hilary Hardman can be contacted at 212-675-6191.



A high-quality waterproof boat amplifier and speaker system would help visitors hear the tour guide above water falling over the dam. A speaker placed in front of each seat on the boat is an ideal method of enhancing the tour. Headphones are another option, but have the limitation of blocking out natural cave sounds and creating distribution issues.

Dance Floor Experience Hub and Media

Purpose:

This interpretive hub tells the story of the cave nightclub and Big Band era using vintage music and period photographs. This serves as a tangible icon that connects residents to their community and to a sense of place.

Themes and Messages:

Sub-theme 7: 7.7, 7.8, 7.9

Objectives:

People will learn:

- About the bands and artists that played here.
- The history of the Lost River Cave Night Club.

People will feel:

- Nostalgia for dancing to Big Band music.
- A connection to grandparents who courted here.
- An understanding that all generations share in the desire for a place to meet and dance to “their” music.

People will do:

- Multi-generational families will converse about the changes in music, dance styles and other courtship activities.
- They will linger and listen to the music.

Description:

The back wall of the nightclub is decorated as it would have appeared for a Big Band dance night. The decoration frames and spotlights three large panels with period photos.

A headline panel announces “The Lost River Cave Nightclub” with a sub-text that describes how long the nightclub was in operation here, why it opened and why it closed. Photos of the dance floor show how it appeared in the 1930s and ‘40s.

The middle panel, “Swing with the Big Bands” features the artists and bands that played here and is accompanied with digital Big Band music from stereo speakers. Motion detectors trigger the recordings. Ella Fitzgerald, Dinah Shore and the Francis Craig orchestra are featured. An inset interprets the local “shake rag” bands that often played here.

Another panel on the right, “Dance Like Our Grandparents” focuses on people from the community who came here to dance. It features the story of Elna and Sheffield Wood who became engaged here in 1943 and returned in 2000 for the annual Summer Swing dance, only days before Sheffield passed away. It includes quotes from Sophia Wang’s award winning essay about the cave: “I wish one day our class would have the prom night inside the cave and dance like our grandparents”. Photos of recent events on the dance floor show that this wish has come true.

“...Dance Like Our Grandparents”

This concrete floor may seem quiet today, but from the 1930s to the 50s, it was the center of a hopping “Underground Night Club.” Every evening, couples twirled, friends shared drinks and laughs, and the music of live bands filled the air. Young lovers and poets were captured by the romantic allure of the “Cave Valley of Dreams.”



Poetry of Philip J. Noel

The Romance of Lost River Cave, Valley of Dreams, 1938

*This stream gives echoing sounds of laughter,
As she flows over the Power House Waterfalls,
That makes the lovers so active and romantic,
On the dance floor of the Cave-night balls.*

*The cave air is filled with charming music,
And with all scenes so lovely and bright,
It sends thrills through the lover's hearts,
Which keeps them alert, and pepped up all night.*

*As they talk and enjoy themselves together,
And meet strangers and friends face to face,
Their minds and eyes will change romantic,
By the Cave thrills of this enchanted place.*

The Dance Floor Today

“I wish one day our class would have the prom night inside the cave and dance like our grandparents.”

~ Sophia Wang, seventh grade

The Underground Night Club hosted its last dance in the 1950s. But the tradition has been handed down to the next generation. Today, spring proms, summer dances, and weddings bring the dance floor to life once again.

The Romance of Elna and Sheffield Wood



In May of 1943, a young soldier led his sweetheart off the cave dance floor to a small table.

“Why don’t you set the date?” he asked. “You’re drunk” she said, “and it’s October first.”

Elna and Sheffield Wood were married just before Sheffield shipped off to Germany.

Nearly 57 years later, Sheffield and Elna were invited as guests of honor to the 2000 Summer Swing Nite Ball.

They returned to the place where they had fallen in love and danced until dawn.

Shef and Elna both passed away later that year.



“Get Down in the Valley” celebration, September, 2003



O’Nan wedding, August, 2006



The dance floor features life-size photograph cut-outs of people dancing, singing, and celebrating to immerse the visitor in the night club scene. Panels behind the cut-outs incorporate real quotes, stories, pictures, and digital music, connecting visitors to this compelling resource.



This exhibit would consist of several interpretive panels and life-size photograph cutouts of people at the Underground Night Club. The panels would be installed on a decorated cave wall near the walkway to the dance floor.

Cave Mill Experience Hub and Media

Purpose:

This hub interprets the mills that operated at Lost River Cave and provides an experience with a mill on the bluff that replicates (to scale) one that operated there from 1874 to 1915.

Themes and Messages:

Sub-theme 5: 5.1-5.4

Objectives:

People will learn:

- Two separate mills were operated using waterpower from Lost River, one directly in the cave before the Civil War, and one on the bluff after the war.
- About the equipment that was used in 19th century milling.
- That these mills made flour, lumber and brandy.

People will feel:

- Engaged by the clattering of milling equipment in the replica mill.
- Connected to the early history of Kentucky and of Warren County.

People will do:

- Purchase a ticket to the mill where they will participate in demonstrations of milling.
- Purchase milled flour from The Cave Mills.

Description:

At the dam overlook adjacent to the power house, an interpretive panel, “The Cave Mills” illustrates what the two mills might have looked like. It includes quotes from early travelers about the first mill and photographs of the second mill. An example is the quote from Lewis Collins in 1847:

“Under this arch an enterprising Kentuckian has located his grist mill, and the noise of the falling water, and the clattering of the cog wheels by giving life and animation, increases the picturesque effects.”

A replica of the 1874 mill is built in its original location on the top of the bluff. If feasible, it will be connected to a water wheel below the dam by a shaft through the hole that John Row drilled through the cave arch. Visitors access the mill by a trail from the Orientation Hub that follows along Cave Mill Road.

The mill is equipped with period equipment. Living history demonstrations are offered to visitors on a regular schedule.



An interpretive panel helps visitors visualize the mills built in and above the cave.



The Cedar Creek Grist Mill.
www.cedarcreekgristmill.com



Rebuilt grist mills, like the Cedar Creek Grist Mill in Washington (above), are popular tourist destinations and educational sites. Completed in 1989, the living museum interprets the workings of mills in the late 1800s to visitors and school groups. Grains ground in the mill are offered for sale. Rebuilding the Lost River Cave mill would be a large initial investment of money and time, but the potential for tourism and education is tremendous.

Barrens and Old Kentucky Homestead Experience Hub and Media

Purpose:

This experience hub immerses visitors in the early days of Kentucky and Warren County.

Themes and Messages:

Sub-theme 3: 3.1-3.6, 3.9-3.13

Objectives:

People will learn:

- That barrens was a prairie landscape that greeted the early farm settlers over much of western and central Kentucky.
- That butterfly larvae and adults feed on specific prairie plants.
- Some of the common prairie wildflowers and grasses.
- That the rich soils of the barrens supported thriving farms in the early 19th century where corn, tobacco and other crops were grown.

People will feel:

- Engaged by the living history demonstrations that transport them back in time to the early farm days of Kentucky.
- A sense of discovery in the barrens and butterfly house.

People will do:

- Observe butterflies in the butterfly house and in the barrens restoration.

- Walk the barrens interpretive trail and view the wildflowers and grasses.
- Participate in programs in the butterfly house.
- Participate in living history demonstrations at the Old Kentucky Homestead.

Description:

The barrens restoration offers a landscape view that historically provided a rich hunting ground for Native Americans and rich soil for early European farmers. An interpretive trail with small plant labels meanders through the restoration and introduces people to the parade of wildflowers and grasses throughout the spring, summer and fall. The panels will feature the nectar and larval forage plants for butterflies that are seen in the butterfly house and along the trail. A trailhead panel has a map showing the extent of the barrens and describes the barrens as an important landscape in Kentucky history.

The butterfly house is linked to the barrens through interpretation of the barrens wildflowers that provide nectar for adult butterflies and forage for larvae. Each butterfly species feeds on specific plant species. Visitors will observe wild butterflies feeding in the barrens.

Adjacent to the barrens is the Old Kentucky Homestead. It is a representation of the early European farm settlements and includes a house, barn, smokehouse and outhouse, all equipped with period tools and furnishings. A rail fence encloses the homestead. A small garden area grows tobacco, corn and other crops that the pioneers grew. Living history demonstrations are offered on a regular schedule. Interpretive panels describe the importance of these farms in the development of Bowling Green and Warren County and offer images of early farm life.



The Old Kentucky Homestead provides opportunities for students to learn hands-on what it was like to be a pioneer. Costumed interpreters lead activities such as planting a field, churning butter, making candles, or feeding the livestock.

Interpretive panels illustrate the historical significance of barrens areas when interpreters are unavailable.

Early Tourists Experience Hub and Media

Purpose:

Located near the tourist cabin, Highway 31 W, and the historic entrance to the cave, interpretive media with historic photographs and objects transport visitors back to the heyday of Dixie Highway tourism at Lost River Cave. Interpretive media connects people to the significance of the highway corridor through history and the reason why it passed directly over the cave entrance.

Themes and Messages:

5.1, 5.3, 5.4, 6.1, 7.1, 7.2, 7.4, 7.8

Objectives:

People will learn:

- That Lost River Cave was a thriving tourist attraction from the 1920s to the 1950s.
- About the attractions and legends that lured people off of the Dixie Highway.
- About the evolution of the travel corridor—Louisville-Nashville trail, L-N Turnpike, Dixie Highway, Highway 31 W—and that this has been a significant “watering hole and campsite” for travelers through history including Civil War armies.
- How the I-65 bypass cut off the tourist flow and contributed to the closing of the cave as a tourist attraction.

People will feel:

- Like they have been transported to the time of 1930 Dixie Highway tourism when people were lured to stop for gas, stay in a cabin, have a barbecue dinner, and go on a guided tour into the cave.
- A sense of connection to the many people who have traveled by here and camped here as the road evolved from trail to turnpike to highway.

People will do:

- Look down from the overlook to the old tourist staircase and cave entrance.
- Look into the restored tourist cabin and vintage car and imagine what it was like to spend a night at Lost River Cave in 1930.
- Participate in the interpretive media and be engaged in the history of the corridor and campsite.

Description:

This interpretive hub includes three tangible connections to 1930 era tourism: the tourist cabin, historic arch gateway with its staircase to the cave, and Highway 31 W. An old car (1930 Chevy touring car?) is placed under a gas station canopy with a 1930 era gas pump. The radio in the car plays vintage music. As you enter the canopy you trigger a voice message: Would you like me to fill ‘er up? Can I check your oil and wash your windows?

A highline pole with a historic red and white DH (Dixie Highway) marking also has posters nailed up announcing big bands coming to Lost River Cave. A large (at least six feet by twelve feet) blow-up photo behind the gas station shows the old building facade with its signs promoting the attraction. Full size photo cutouts of people in 1930s dress

stand in front so you can have your picture taken with them. An interpretive panel shows the evolution of the tourist stop from the 1920s to 1950s. A view into the tourist cabin shows what it looked like in 1930.

Panels placed along the wall facing the highway interpret the corridor and campground. These include a panel interpreting

the Louisville-Nashville trail and turnpike, a panel telling the story of the Civil War troops that used the turnpike and camped at Lost River Cave, and a panel interpreting the Dixie Highway and I-65. These eras are illustrated with drawings and period photos.



A 1930s automobile, gas pump, and full-size person cutouts involve the visitor in the early tourism era of the Lost River Cave. Vintage music on the car radio and real photographs connect people to the site (see a sample panel on page 109).



Chapter 7—

Summary of Recommendations



The rushing Lost River on its final run to the cave. March, 2006.



Treetop Bridge. November, 2005.

Lost River Cave and Valley has experienced unparalleled popularity in its brief existence. It has achieved financial success and exhibited tremendous potential as a commercial tourist attraction. It is on the threshold of a transition to a new and elevated level of tourism, and if facilities and programs are properly developed, will evolve into a robust, community institution.

The need to exhibit financial sustainability has been a paramount concern in the Cave's first years of operation. Having achieved a level of commercial success, now is an opportune time to strategically reassess the organization's objectives to accomplish its mission and goals.

Underground boat tours are the primary tourist attraction, but these tours are nearing their maximum carrying capacity. There are few meaningful, alternative activities for visitors as they wait hours for their tour, or on the days when the cave is flooded.

There are several fundamental courses of action that can be taken to increase the quality and quantity of service and to expand market audiences.

Proposed Course of Action



Conceptual rendering of the Lost River Cave and Valley Visitor Center.

First, develop facilities and programs that will encourage longer and more holistic site experiences. With a visitor center as the hub, thematic activities can keep visitors happily involved for a half-day visit. This plan offers a strategy for incrementally developing activity hubs that will encourage visitors to spend longer periods of time here. The result will be more satisfied customers who leave feeling that they have had a meaningful experience. In addition, the school program will be greatly expanded beyond the current tour offering, extending their time on-site.

Second, this plan proposes strategies that will diversify the activities and times that groups utilize the Lost River Cave facilities. There are potential audiences that can use the visitor center simultaneously with tourists and schools. During the day, workshops, business meetings, and seminars can be held in a unique and inviting “outdoor” setting in a proposed multi-purpose room with decks that project out over the valley. In the evening, large social gatherings and events can be hosted in the 1,500 square foot Grand Hall with food service in the adjoining multi-purpose room, each room opening onto spacious decks that look out over the valley. The seasonal cave use for weddings, proms, and other special events will expand when these festivities can migrate from the cave into this comfortable, elegant space.

Third, this plan proposes the restoration of the valley forests and ridge top barrens. This will allow Lost River Cave and Valley to expand programming into the nature center niche market. Unique to the region, a nature center program and restored nature sanctuary will serve as a recreational resource for Bowling Green residents, a value-added experience for tourists, and an expansion of the school program offerings. This plan proposes facilities and media that will thematically link natural and cultural history.

These improvements will require a large investment of time and capital. The developments described in this Interpretive Master Plan reflect the vision of the Lost River Cave Directors and staff. Investing in these developments will result in an expanded and more satisfied audience, increased revenue, and an institutional bond with the Bowling Green community.



Large decks attached to the visitor center will provide views into the scenic Lost River valley. March, 2006.



Special events and festivities, like weddings, have the potential to expand with the added space of the visitor center Grand Hall and multi-purpose room. O’Nan Wedding in Lost River Cave.



Already a hot-spot for birds, the restoration of valley forests and ridge top barrens will enhance wildlife habitat and viewing for nature enthusiasts. May, 2006.

Recommended Phases of Development



Conceptual rendering of the “Spirit of Lost River” theater production.



Multi-purpose room hosting a meeting. Schmeckle Reserve, Wisconsin.



Thematic gift shop. Great Lakes Aquarium, Minnesota.

Phase #1

1. Develop a Visitor Center with theater, exhibits, multi-purpose space and a grand assembly area. This facility is the key to improving services and expanding to new audiences. The theater production is a dramatic media tool with the potential to be an attraction second only to the boat tour. It is fundamental to creating a holistic visitor experience and a sense of place.

Rationale:

- This building will be a gateway to Lost River Cave and Valley. It will welcome, organize, and prepare visitors for their experience.
 - This facility will alleviate visitor frustration with the long waits for cave boat tours with meaningful activities that are available during the wait.
 - It will provide room to host seminars, workshops, school classes, and even tourists during inclement weather.
 - The grand assembly hall, multi-purpose room, and expansive decks will offer a unique, naturally elegant site for large social gatherings.
 - It will offer an optimal sales area with a larger and more diverse inventory. It will also eliminate overcrowding which discourages potential customers.
2. Improve the cave experience. Provide a sound system on the tour boats. Investigate various walking tour scenarios in the cave to add to the tour duration and depth of visitor experience.

Rationale:

- Invest in a quality speaker system for the boat tours to improve visitor satisfaction. A large percentage of visitors who were surveyed expressed disappointment with the sound on the tour boats.
- Develop a walking tour within a portion of the cave. Despite the scheduling complexities, an opportunity to walk in the cave would be rewarding to many visitors and would satisfy the need of some for a longer underground experience.



Boat tour in Lost River Cave. March, 2006.

3. Develop interpretation of the dance floor. Visitors will value these human interest stories. It is seen by many as part of the cave experience and can increase time spent “in the cave”. Flooding seldom impacts this area.

Rationale:

- The cave dance hall holds great interest for a cross section of visitors but is currently under-developed. This minimal and cost effective investment of capital and effort will result in a heightened visitor experience.



Conceptual rendering of dance floor exhibit.

4. Restore natural plant communities between the cave and bridge. The signs, trail, and landscape from the parking lot entry to the cave convey the values of the LRC&V to visitors. A high quality, natural experience should be visually communicated.

Rationale:

- This small natural area is “the front door” to Lost River Cave. Visitor’s expectations are set here before they ever enter the cave. A carefully restored environment reflects the natural history and conservation values exemplified by the Friends of Lost River Cave and Valley.



Hepatica wildflowers above a blue hole. March, 2006.



Eliminate “negative cues,” like wires strung from trees along the trails.

5. Eliminate negative cues. Create an esthetically pleasing gateway to the site from entrance to parking and to all experience hubs. This includes the removal of machinery on the bluff top, removal of wires on poles and trees, creating uniform signage, and paving the entire walkway from the visitor center to the cave.

Rationale:

- Elimination of “negative cues” will put a more professional face on the primary program areas.
- Paving the walkway will improve accessibility for people, especially those with mobility limitations.



Unified signage using recommended media design standards.

6. Develop uniform signage and wayfinding systems. Orientation and wayfinding should be given great attention in this phase.

Rationale:

- Visitors will venture onto trails when they feel safe, well oriented and if there is a promise of reward.

7. Employ an Operations Supervisor to oversee program development.

Rationale:

- This position will provide consistent oversight of staff employment, training, and daily operations.
- Professional supervision is needed to achieve the highest quality in tourist and educational programs.
- The position will provide vital assistance to the Executive Director in marketing, promoting, and funding Lost River Cave and Valley.

Phase #2

8. Create a quality natural history experience in the valley and prairie barrens. There is an unfilled need for a community nature center in the Bowling Green area, a place where environmentally minded individuals can gather. The new visitor center coupled with a “Nature Sanctuary” will be a catalyst for this. The butterfly house is compatible with this philosophy. This will require the restoration of plant communities along the Blue Holes Trail and the ridge top barrens.

Rationale:

- There are few quality nature trail experiences available in the Bowling Green area. The existing trails in the valley are closed in by vegetation and are underdeveloped in the eyes of most visitors.
 - The nature center niche is unfilled in the community. Development of a visitor center and associated wild area will stimulate interest in conservation and nature-based recreation in the Bowling Green area. LRC&V has great potential to develop this community service.
 - This development could attract significant volunteer support from citizen conservation groups in the area and expert advice and assistance from WKU biology faculty and students.
9. Employ an Interpretive Naturalist to develop a nature program and oversee restoration of the forest and barrens habitats.

Rationale:

- Professional expertise is necessary to develop the “Nature Sanctuary” and natural history programs.



Snowshoe hike. Mosquito Hill Nature Center, Wisconsin.



Historic farming program. Heritage Hill, Wisconsin.



Conceptual design of the old Kentucky homestead experience. Costumed interpreters would lead school groups and visitors in hands-on activities.

10. Develop an old Kentucky homestead experience. This is an opportunity to connect school children and families to their unique “barrens roots”. It also ties directly to the other activity sites at LRC&V, especially the restored barrens.

Rationale:

- The development of the homestead and prairie restoration helps people to understand the significance of the dry prairies and barrens in the settlement of karst country including Warren County. This is a human story with great potential for visitor involvement.
- The Prairie Barrens restoration establishes a thematic connection to the butterfly house. It also re-creates a plant and animal community that is critically endangered in Kentucky.



Conceptual rendering of the Tourist Cabin/Dixie Highway interpretive area.

11. Develop a tourist cabin/Dixie Highway interpretive site. The cabin and stone arch leading to the old stairway are tangible links to the famous highway that nourished the growth of the dance hall, the roadside attractions, and the tourist court.

Rationale:

- The commercial heyday of the Lost River Cave is a classic example of the early automobile era, tourism, and the evolution of roadside attractions and lodging. The tourist cabin and LRC&V gateway are tangible connections to this romantic era.

Phase #3

12. Reconstruct an Old Mill and develop an educational program. This activity hub has potential to be a popular tourist attraction and an involving school program. It is assigned its own phase due to the large investment of resources required to accomplish this in a quality manner. It will be a working icon of Lost River Cave and represents the highest goals that the mission statement addresses.

Rationale:

- Reconstructing a working mill above the cave will develop a historic context for many of the stories and logos symbolic of Lost River Cave. The mill will be a dynamic attraction and could promote active volunteer and visitor participation. The potential cost of construction and difficulty in accessing the site dictate that it be addressed as a distinct entity.



Interior of a grist mill in Batsto Village, New Jersey.
www.batstovillage.org

1874 Mill and Cave Valley.
Courtesy of Fred Thrasher.



Appendices



Exploring Civil War cave writings in Lost River Cave. May, 2006.

Appendix 1

Visioning Focus Group Meeting March 31, 2006

List of Attendees

- Chuck Coates
- Helen Siewers
- Brian Shirley
- Jim Bullington
- Sylvia Risher
- Tammy Thompson
- Andrea Lovan
- Becky Bierman
- Elvin Smith
- Raymond Cravens
- Owen Lawson
- Nick Crawford
- Eddie Beck
- Whayne Priest
- Jerry Shelton
- Geroge Corrie
- Lucia Maxson
- Delane Simpson
- Jim Carroll
- Rho Lansden
- Mike Davenport

Results of Visioning Meeting

Site Development:

What future outdoor site development would enhance the cave, bluff, and valley?

- Recreate some “mini-falls” in cliffs in the valley.
- Re-create the barrens at top of valley-tall grass prairie
- Remove exotic invasive species from valley
- Need benches, lighting, signage (WAYFINDING- Maps, etc.)
- Use weather station for education
- Trail Spurs off Greenway with overlooks & interpretive signage
- Environmentally Sensitive Design for parking lot (with interpretation)
- Flood control of Cave Floor
- Dam Restoration
- Consider wheelchair access in selected area.

Gift Shop:

- Reproduce old mill and distillery
- Music Barn Restoration
- Amphitheater
- Tourist cabin (restored and maintained)
- Bathrooms on far end of valley
- Remodel existing building for Visitor Center
- Group picnic shelter (above)
- “Old Mill” as Visitor Center
- Create meeting space in Visitor Center for 200 people.

Facility Development:

What buildings should be developed or redeveloped at the Lost River Cave & Valley?
What should be included in each facility?

- Butterfly House Expansion
- Outdoor Education Center
- Walnut Factory- observation deck hole into basement
- Powder Magazine Building- Use/ reconstruction
- Visitor Center/ Interpretive Center
- Not building inside the valley. Keep natural state
- Rebuild the Walnut Factory
- Exhibits- can cost more than the building
- Night Club/Restaurant up top
- Karst Study Center- Connected to university
- Connect facilities to history of site
- Museum
- Restore winding staircase into Valley- 1934 entry
 - o Alternate route
 - o Wayside exhibit
- Combine Functions- reduce footprint on site.
- Water fountains in the valley
- Drainage Basin wayside exhibit
- Trail maps, trailheads
- Park area, gazebo, across from old stairway.
- Retention area used for education/ interp.
- Different hierarchy of path sizes and treadways.
- Build a walkway to get visitors further into the cave.
- Hydraulic Ram for pumping water
- Pave trail down to the cave- accessibility

Goals:

What are the most important goals of the Lost River Cave and Valley?

- Preserve and protect cave, river, and valley for future generations. (30)
- Provide ed. facilities and exhibits relevant to the region- wetlands, barrens, Nat. Am., Civil War, ball room, etc. (22)
- Provide educational opportunities and increase participation of schools (schools, backyard, nature programs, Karst) (21)
- Cave should be self-sufficient/ financially independent. Pay debt. (17)
- Research and Interpret the cultural history of area and present culture. (15)
- Rebuild the Cave Mill as a working Ed/Ex. –And Tourist attraction (13)
- Expand the ed. efforts with community to understand & appreciate the significance of the LRC&V. Find a way to encourage local residents to LRC&V. Build a community involvement- it is key to long term protection. (11)
- Expand the university involvement in the research and development of the cave. (11)
- Expand/extend boat tours (10)
- Monitor the construction of surrounding land area (outside LRC&V.) (10)
- Do more public (community/local) events such as civil war events, blue grass bands, etc. (10)
- Provide shopping- unique items for revenue (6)
- Maintain Valley for solitude and serenity. (6)
- Emphasize Karst as the landscape we live on. (5)

- Maintain & enhance the natural beauty of the area. Example- remove exotics. (4)
- Emphasize geologic uniqueness of the valley (4)
- Increase comm. involvement and increase membership in the FLRC. (4)
- Expand the butterfly habitat (perhaps year round) (3)
- Wild cave exploration with area for children (2)
- Instill in visitors- water quality dependent on surface activities (1)
- To amplify the significance of the LRC&V.
- Assist the public to conveniently view the LRC&V.
- Build educations/museum building to tell the story of LRC&V
- Build programs for financial stability
- Make LRC&V fun & exciting- where people want to go
- Keep LRC&V. natural for ed. and research.
- Increase visitation and capacity of LRC&V- logistics
- Keep goals high but attainable.

Audience:

Who are the target audiences and potential audiences of Lost River Cave & Valley?

- School Groups (currently elementary, need more high school)
- Current Interests of family groups (evolving)
- Boy Scout, 4H, youth groups...
- Churches
- In-transit Vacationers
- International Visitors (horses and global economies & family)
- "Cavers" from Europe
- People with limited mobility and strollers

- Senior Bus Tours
- Social events at LRC&V- weddings, anniversaries, proms, birthdays
- Teachers (preschool – U.)
- Walkers-Trails-Greenway
- University Classes
- Continuing education/adults
- People attending events, workshops, community activities, conventions
- Tourist Buses
- Cave visitors- in region to see caves.
- Civil War enthusiasts- John Hunt Morgan tour bus (forts, soldiers)
- Corvette Museum visitors
- Local people with memories of exploring the cave or the night club.
- Internet users who see the LRC&V website
- Geocaching (on website)
- Penny Smashing (on website)

Stories:

What are the important stories to be told at the Lost River Cave & Valley?

- Oral Histories- collect & encourage, archive (17)
- Civil War – such as 3 civil war general soldiers who explored cave, Painter-Capman etc. (17)
- Story of Volunteerism in a community to save a resource (documentary) (15)
- How it functions as a habitat island in urban area (cave valley is an urban forest). National Bird Counting Day- Plants and Animals. (14)
- The decline & rebirth of the Cave (14)
- Barrens of KY—Related to karst—tall grass prairie (14)
- Night Club & Romance- big bands (Jimmy Stewart) (12)
- Relationship of groundwater to our everyday lives (12)

- How the Cave and Valley was formed (11)
- The uniqueness of the Geologic System (11)
- Economic Utilization- water power, mills (10)
- Audio exhibits that tell life stories—oral histories (8)
- Native Americans (don't know much) (8)
- General History of the area (how valley was used) (7)
- Tourist Cabins (6)
- Key link to a Green Ways Program (4)
- Pre-history through settlement-Cultural history (4)
- Show storm-water management (4)
- Story of the Blue Holes (legends) (3)
- Walnut Factory (3)
- Need more research & photos, documents, and objects & archives (document current events- guides) (3)
- LRC&V is a trailhead of the Greenway Trails (3)
- Early Tourism (2)
- Powder Houses & Rock Quarrying (1)
- Weddings and Honeymoons in '30s (1)
- Cedar tree in valley—largest in KY? (1)
- Link in the heritage corridor
- Connection to LR Rise, Dog park, etc. by foot

Appendix 2

Visitor Surveys Conducted March 29-April 1, 2006

Pre-Tour Survey, March 29, 2006

1. Where do you call home?
 - FL 3
 - OH 3
 - KY 2
 - TN 5
 - MI 1
2. Why did you choose Lost River Cave to visit?
 - Heard other people talk about it. 4
 - From a local school group 1
 - From local winery 1
 - Knew someone from the area 2
 - The boat trip is unique. 5
 - Found it on a brochure 4
 - from motel 2
 - Sahara Steak house 1
 - from Mammoth Cave 1
 - Wanted to visit for a while 1
 - Saw it on TV 1
 - Love history 1
 - Wife is claustrophobic, thought she could do this cave 1
 - Already in area 2
 - Visiting Mammoth Cave 3
 - Spring Break 3
 - Not too far away 1
 - Saw online 2
 - Sounded Fun 1
 - Caves sounded cool 2
 - Billboard 1
 - Boat tour/butterfly house 2
3. What other places have you visited or will you be visiting on this trip?
 - Mammoth Cave 10
 - Won't go back to Mammoth Cave, the groups are too large 1
 - Dinosaur World 1
 - Diamond Caverns 1
 - Horseback riding 1
 - Games 1
 - Alpine Slide 1
 - Shaker Museum 1
 - Octagon House 1
 - Horse Cave 2
 - Corvette Museum 1
 - No other plans 1
 - Food establishments 1
 - Kentucky Down Under 1
 - Louisville Coca-cola Museum 1
 - Louisville Zoo 1
 - Louisville Jim Beam Museum 1
 - Cave City 1
4. Did you have any difficulty finding your way to the Lost River Cave?
 - No, saw signs from highway/road 6
 - No, map in brochure 1
 - No, followed signs 3
 - Make entrance sign bigger 1
 - No, local person 1
 - Yes, not enough signs on road 2
 - Only knew how from brochure 1
 - No, internet directions 2
5. What are your first impressions of Lost River Cave? (Could you find the welcome center? Did you know where to purchase tickets?)
 - Clean 3
 - Nice 7

- Friendly 1
- Nice Welcome Center 1
- Easy to see signs 2
- Enjoyed mining for gems 2
- Comparable to Mammoth Cave 1
- Peaceful 1
- Doesn't look "deadbeat" 1
- Natural 2
- Well maintained 5
- Safety (trails well lit, don't worry for children) 1
- Very Welcoming 1
- Rustic Looking 1
- Nice gift shop 1
- Nice tour 1
- Signs tell where to go 1
- Beautiful day 1
- High Bridge 1
- Very Organized 1

Pre-Tour Survey, April 1, 2006

1. Where do you call home?

- KY 14
 - Ft Cambell 1
 - Ft Knox 1
 - Just moved to Bowling Green 1
- IN 10
- PA 1
- GA 3
- India 1
- TN 3
- WV 1
- IL 2
- MI 6
- OH 1
- TX 1
- CA 1
- Windsor, Ontario 1
- CO 2
- NC 1

2. Why did you choose Lost River Cave to visit?

- Family/friends have visited previously 1
- Internet Search 10
- Brochure 17
 - from Cave City
 - through a friend
 - brochure of KY caves in rest stop
 - Indiana Hotel brochure
 - saw brochure at rest stop on way to FL
 - Holiday Inn
 - Corvette Museum
- Knew about previously 6
- Came before; closed due to water 1
- Went to Western Kentucky years before 1
- Mammoth Cave (saw boat tour) 3
- Boat Tour 1
- Coming back from FL vacation 1
- Destination was Bowling Green 2
- Close to home 1
- Word of mouth from other person 2
- From lady at Corvette Museum 1
- Kids like caves 1
- Family close by 3
- Was on the way 2
- Come once a year 1
- Saw in Discovery Magazine at home 1
- Had extra time on trip 1
- Nice day 1
- Can't walk a lot 1
- Caves 3
- Drive through at Crackerbarrel 1
- Spring break 1

3. What other places have you visited or will you be visiting on this trip?

- Mammoth Cave 10
- Diamond Caverns 3
- KY Down Under 3
- Churchill Downs 1

- Cave City 2
 - Hidden River 2
 - Visiting Family/Friends 1
 - No other 9
 - Beach Bend 1
 - Campus 1
 - Corvette Museum 4
 - Corvette Plant 1
 - Dinosaur Park 1
 - Caves 2
 - Live in area 1
 - Museum at KY University 2
 - Nashville 2
 - Memphis 1
 - Old house on boat 1
 - Undecided: weekend visit to area 1
 - Mall for the weekend 1
 - Jack Daniels Distillery 1
 - Hotels 1
 - Shopping 1
 - Louisville 1
 - Orlando, Florida 1
4. Did you have any difficulty finding your way to the Lost River Cave?
- No difficulty 27
 - No, the signs helped 5
 - Had directions 1
 - Bike traffic 1
 - Passed on way to work 1
 - Had difficulty finding “Cave Mill Rd” in Bowling Green. Stopped for directions 1
 - Drove past and turned around because it didn’t look like a commercial attraction 1
 - No, could use bigger sign 1
 - No, operator error 1
 - Mammoth cave directions 1
 - Given park directions 1
 - No, map worked well 1
 - Difficulty seeing sign at Hwy 22 3
5. What are your first impressions of Lost River Cave? (Could you find the welcome center? Did you know where to purchase tickets?)
- Didn’t expect it to be so developed 1
 - One small sign at 22 1
 - Pretty area 2
 - Nice 5
 - Closer to town 1
 - Neat/Well kept 5
 - Walked to Blue Holes 1
 - Didn’t expect proximity to Bowling Green 1
 - Concern for RV parking 2
 - No first impressions 4
 - Gift shop clean and friendly 2
 - Clean 3
 - Accessible 1
 - No Problems 1
 - Looked touristy-negative 1
 - Nature appearance 1
 - Enjoyed rustic appearance 2
 - Wasn’t sure it was the right place 1
 - Didn’t appear to be a public place 1
 - Didn’t look like entry to cave 1
 - Wasn’t sure where end of parking lot was 1
 - Nice gift shop 2
 - Nice mill appearance 1
 - Sign difficult to see, so overshot location 1
 - Nicer than last year 1
 - Enjoyed bridge 1
 - A few more signs 1
 - Enjoyed mining area 1
 - Not a sign to turn left at front 1
 - Climbing Wall 1
 - Lot of trees 1
 - Picnic tables 1
 - Hilly 1
 - Missed entry 1
 - Confusion with Gifts sign 1
 - Parking 1

Post-Tour Survey, March 29, 2006

1. Where do you call home?
 - FL 2
 - MI 1
 - OH 2
 - TN 1
 - NC 1
 - TX 1
 - WV 1
 - KY 1
2. What did you do during your visit to Lost River Cave?
 - Boat Tour 7
 - Visitor Center 2
 - Gem Mining 3
 - Did not walk trails 1
 - Walk Trails 1
 - Gift Shop 3
 - Second Hole (blue hole) 1
3. What were your favorite experiences during your time at Lost River Cave? Is there anything specifically from the boat tour that was the most memorable?
 - Gem Mining 2
 - History 1
 - Rock Formations 2
 - Night Club 4
 - Ballroom 1
 - Boat Tour 4
 - Inside of Cave 2
 - Tour Guide 4
 - Tour in General 2
 - Wildlife 1
 - Jesse James 1
 - Facts 1
 - Chose over Mammoth b/c didn't want big cave experience 1
 - Bats 2

4. Can you make any suggestions that can improve your experience here?
 - Take group further into the cave 2
 - Alternative nature experience 1
 - No changes 3
 - Longer Tour 3
 - More History 1
 - More elderly accessible 2
 - Bathrooms adjacent to trails 1

Post-Tour Survey, April 1, 2006

1. Where do you call home?
 - MI 5
 - KY 17
 - IN 5
 - OH 3
 - IL 4
 - Richardsville 1
 - Pakistan 1
 - WV 1
 - Portland 1
 - TN 4
 - Woodburn 1
 - Students at WKU 1
 - GA 1
 - Owensboro 1
 - NY 1
2. What did you do during your visit to Lost River Cave?
 - Boat Tour 33
 - Gift Shop 39
 - Butterfly House 4
 - Short Wagon Trail 1
 - Trails to Blue hole 1
 - Trails to Butterfly House 1
 - Climbing Wall 1
 - Cave Tour 6
 - Blue Holes 2
 - Walked in Valley 13

3. What were your favorite experiences during your time at Lost River Cave? Is there anything specifically from the boat tour that was the most memorable?
 - Boat Tour 14
 - Nightclub 4
 - Outlaw Stories 1
 - Dance floor stories 1
 - Blue holes 10
 - Blue hole story 1
 - Fish in blue hole 1
 - Been to other caves; this is different 1
 - Tour in General 3
 - Tour Guide 13
 - Cave Tour 1
 - Neatness 1
 - Rocks and animals in water and cave 3
 - History and stories 8
 - Dam was cool 1
 - Peaceful/Relaxing 3
 - Cave/formations: interesting 7
 - Bats, crawfish, and other wildlife 14
 - Like the low duck (wishing rock) 10
 - Being inside: seeing formation 3
 - Cat in bathroom 1
 - Jesse James and other folklore 6
 - Stairs to Jesse James waterhole 1
 - Nature walk 1
 - Trails 2
 - Aesthetics 3
 - Watching Everyone 1
 - Waterfall 1
 - Restroom convenient 1
 - Holes for hideouts 1
 - Kentucky wildcat 3
 - Praying hands 1
 - Everything in general 2
 - Gift Shop 1
 - Riding in Cool Boat 3
 - Larger than expected 1
 - Tour appropriate length 1
 - Being in nature 1
 - Local and in the community 1
 - Entry Rock 2
 - Color of Rocks 1
 - Seeing figures in the rocks (5yr old) 1
 - Enjoyed touching the water (3yr old) 1
 - Enjoyed the Walk 1
 - Escape route 1
 - Spool from flood 2
 - Civil War history/soldiers 2
 - Enjoyed wildflowers 1
4. Can you make any suggestions that can improve your experience here?
 - Difficult to hear speeches on boat 14
 - Conflict with passengers talking 2
 - No Changes 1
 - Duck! 1
 - No butterflies 3
 - Longer Tour 7
 - Cut out Ceiling 1
 - See animals in cave 1
 - Want to see more of cave 3
 - More advanced tour with no kids 1
 - Need rest areas 1
 - Power of water story 1
 - Nature walk with signs 1
 - Identify wildflowers 2
 - Younger child was scared 1
 - Keep natural, don't clean up 2
 - Get rid of pollution (cow pastures) 1
 - Picnic Area 1
 - Light show in cave 1
 - Lights on bottom of boat 1
 - Chattanooga: different colored lights 1
 - Take people to the formations 1
 - Available refreshments (Water, Coke machine) 3
 - Stairs need repair 1
 - Elevator for smokers 1
 - Felt Safe 1
 - There was a lot of labeling, but needed better identifications 1
 - Food for fish by blue holes 1
 - Tour was appropriate length 1
 - Guide didn't explain blue hole 1
 - Make the old night club come alive 1
 - A lot of waiting 2

Appendix 3

Barrens Prairie Survey

Brief vegetation and terrain survey of about 10 acres of the Lost River property.

By Joe Ray, August 16, 2006


Beginning at the weather station, I surveyed north across the site to the northeastern woodline, to a previously mowed corridor. Next, I followed the mowed strip southeast along the woodline, circling around the weather station, and then paralleled Dishman Lane to the Church property. Five of the proposed sixty-nine species were observed to exist on site:

- Ironweed
- Common Milkweed
- Old Field Goldenrod
- Lance-Leaved Goldenrod
- Tall Dropseed

Therefore about 7% of the recommended species list were already present. Ironweed, Old Field Goldenrod, and Common Milkweed were expected in the grownup field, however, Lance-leaved Goldenrod and Tall Dropseed were a nice surprise. Some addition, short grasses were observed, which remain to be identified.

Alien invasive plant populations included Johnson Grass, Queen Ann's Lace, Vine Honeysuckle, Crown Vetch, and of course Fescue Grass. Invasive woody plants included Russian Olive and Bush Honeysuckle. However, none of these species are overwhelmingly established. Fortunately, noxious invaders such as Teasel and Poison Hemlock were not observed.

Great Goldenrod is well established throughout the site, which has helped to shade-out and diminish Fescue and limit the spread of Johnson Grass. Queen Ann's Lace is thinly distributed except for a local infestation.



Plant habitats vary from rocky limestone glades (barrens) to brushy areas assumed to exhibit deeper terra rosa soils containing better moisture, and possibly a shallow sink or two. The northeastern border is a forest edge along the karst valley. These varied soil and site conditions will provide a good habitat for many different savanna and prairie plants.

Immediate burning of the site is not recommended until the seeding and establishment of desirable native species is substantial. During this establishment period, mowing is recommended rather than burning, in order to limit the release of stored Ragweed, Queen Ann's Lace, and Johnson Grass seeds. Once numerous native species are established, periodic burning will enhance their spread and reduce the density of Fescue and other invasives. Aggressive removal (cutting and spraying of regrowth) will be required for the Russian Olive and Bush Honeysuckle.

One of the first management chores will be laying out an encircling boundary trail, which must be mowed monthly through the summer. Additional crossing trails should be established, according to landscape and vegetation types. These mowed trails will provide easy access to the savanna and function as fire breaks.

In summary, this site is large and varied enough to contain a large native plant community and has the potential to sustain a significant savanna and prairie ecosystem. Similar to most of Kentucky, over 90% of the original plant cover has been extirpated by farming and overgrazing, beginning over 200 years ago. Level sinkhole-plain sites such as this are rarely restored with native vegetation because of their high value as farmland and development property. However, this site has the potential to become a botanical park that is highly attractive to plant specialists and enthusiasts. Also, it can eventually become a plant and seed source for restoring additional sites in the region.

Submitted to:
Friends of Lost River
November 17, 2006

Prepared by:
Schmeeckle Reserve Interpreters
University of Wisconsin-Stevens Point
Stevens Point, WI 54481

Phone: (715) 346-4992
E-mail: schmeeckle@uwsp.edu
Ron Zimmerman, Michael Gross, and Jim Buchholz

