

**OLD JAMESTOWN ASSOCIATION
KARST PROPOSAL TO ST. LOUIS COUNTY**

TO: St. Louis County Council Members

FROM: Kenneth Smith P.E. DIRECTORS: Loretta Becker Chan Mahanta
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SUBJECT: *Florissant Karst* Preservation Proposal

The “*Florissant Karst*” is an area of approximately four square miles of unique geological features located in the Old Jamestown area of North St. Louis County. This is an important feature of the Old Jamestown Area Community Study developed by St. Louis County in 1988. The deep steeply sided slopes and intensity of the sinkholes in the *Florissant Karst* have long been recognized in the scientific community as being unique to the midwestern United States. The boundary of the *Florissant Karst* was determined by the State of Missouri Department of Natural Resources for the Community Study.

A primary characteristic of a *karsted area* is the existence of surface sinkholes into which all surface runoff flows. A *karsted area* is considered to be “internally drained”, and as a result has no surface channels that convey surface runoff to larger natural flowing surface streams. *Karsted areas* have developed over a period of millions of years as subsurface limestone formations that have been dissolved by flowing groundwater, leaving voids (caves) which eventually collapse, and result in visible surface sinkholes into which surface runoff flows. Although millions of years old, the *karst area* is continually changing as new sinkholes form and existing sinkholes become blocked.

The *Florissant Karst* is unique to St. Louis County and to the State of Missouri in that it constitutes a significant area of essentially undisturbed *karst* geology that is located in a metropolitan area. Provisions of the Community Study relating to the *karst area* have been carefully implemented by the County since 1988 and have resulted in maintaining the unique characteristics of the *Florissant Karst*. In order that this geological feature be preserved for future generations, the Old Jamestown Association requests that St. Louis County enact legislation that will insure that outcome. As this proposal is conceptual, the details of implementation and operation would be developed by St. Louis County.

Karst geological conditions occur worldwide. That was no better demonstrated than by the international audience representing governments, organizations, and individuals who attended the 2007 National Cave

and Karst Management Symposium held in St. Louis last October. Those present shared the common interest of protecting the environmental features and natural beauty of karsted areas all over the world. There are (were) significant karsted areas in Southeast and Southwest Missouri, in the City of St. Louis, South St. Louis County, and the *Florissant Karst* of North St. Louis County. Urbanized Karst areas have been damaged or destroyed by surface development everywhere.

The *Florissant Karst* is unique because:

1. It is a well-defined urban karst area that has not been impacted by development.
2. Is recognized as having the finest example of deep funnel-shaped sinkholes in the central United States.
3. It has few surface streams, because the sinkholes act as natural funnels allowing surface water to flow along underground drainage to the Missouri River.

St. Louis County still has the opportunity to preserve a significant *natural environmental area* for future generations. There are several ways that outcome could be achieved. One, would be to enact *landmark legislation* to formally recognize the Area and to establish storm water design criteria for development projects proposed in the *Florissant Karst* area. To accomplish that, the Association recommends the Council adopt the following resolution.

Reference 1

FLORISSANT KARST PRESERVATION PROPOSAL

4/1/08

WHEREAS the natural drainage system of the *Florissant Karst* remains undisturbed and intact after millions of years, and

WHEREAS recognizing the *Florissant Karst* as an environmentally unique Natural Feature in St. Louis County, and

WHEREAS to acknowledge the importance of maintaining this unique Natural Feature for future generations in St. Louis County

NOW, THEREFORE BE IT RESOLVED THAT THE COUNTY COUNCIL of ST. LOUIS COUNTY cause legislation to be enacted that will establish formal recognition of the *Florissant Karst* Area and to insure the objective of long-term viability and preservation of the natural sinkhole drainage system, as delineated in the Old Jamestown Area Community Study of 1988. Such legislation would specifically include, but not be limited to:

1. Preventing a change of the overall surface runoff pattern of the sinkhole network.
2. Preventing artificial routing of storm water between sinkholes.

3. Preventing the intentional blocking or filling of a sinkhole.
4. Preventing the construction of artificial storm water structures within a sinkhole.
5. Preventing the disposal of any materials, natural or man-made, into a sinkhole that could reasonably be expected to degrade the quality of water entering the subsurface through the sinkhole or to decrease the rate that water enters the subsurface through the sinkhole.
6. Preventing the discharge of developed storm water into a sinkhole.
7. Requiring a Grading Plan and Geotechnical Report, prepared by a Registered Professional Engineer, for large lot subdivisions located in the Florissant karst area, such report to insure compliance with the provisions of the legislation.

References

1. *Florissant Karst* Preservation Proposal- Old Jamestown Association- 4/1/08
2. Environmental Features_- Old Jamestown Area Community Study- 1988 Ppg. 20-25
(Includes Locator Map and *Florissant Karst* boundary)
3. Karst Information Portal- National Cave and Karst Research Institute 6/07
4. Missouri's Natural Communities: Karst- Missouri Conservation Department-2002
5. Conserving Missouri's Caves and Karst- Missouri Conservation Department-3/07
6. Living in the Sinks- Missouri Resources- DNR- Fall 1995- Page 7
(*Florissant Karst* article by Jim Vandike, Department of Natural Resources)