

# Meramec Floods

Reducing flood damage in the  
Meramec Greenway.



Newsletter #47 Summer 2008



## Meramec Greenway

The Meramec Greenway was established in 1975 in response to the deep concern of area residents about the Meramec River's future. Once the region's most popular natural and recreational attraction, the Meramec was undergoing an accelerating deterioration to its waters, scenery and natural environment. This was especially true in the river's lower reaches near urban St. Louis, with its structures lining the banks, sewage outfalls, rubbish, debris and mining.

The goal of this new greenway was to reverse this decline by restoring the river to its natural beauty and recreational potential. A Coordinating Committee of area governments and citizens would guide the recovery via a master plan that was to be prepared. The Committee would seek the cooperative participation of thirteen governments, including nine cities, three counties and the State of Missouri whose jurisdictions touched the river, plus representatives of the private sector.

## Floodplain Structures

The Coordinating Committee was not far into its planning effort when the major issue of structures in the floodplain was evaluated. A survey of the 100 year floodplain of the Meramec in the late 1970's from its mouth to River Mile 50 near Pacific, counted 1,976 such structures. This figure was for the main river only, not its tributaries, and it did not include the several hundred structures in the part of the City of Valley Park that has recently been enclosed in a levee. The types of structures included seasonal clubhouses, permanent residences and some commercial/industrial.

Most of this development occurred in the early decades of the twentieth century, long before planning and zoning ordinances were in place. Most were related to the popularity of the Meramec Valley for its recreational value. Here could be found beaches for swimming, the river for canoeing, scenic beauty and cool breezes, all in stark contrast from the hot and crowded St. Louis urban area. Communities to cater to the tourism sprang up in the valley followed by construction of privately owned or leased seasonal clubhouses.

The clubhouses were clustered along the riverbank for the most part. Built for summer use only, they were mostly owned and enjoyed by families. These people were aware that the floodplain belonged to the river

and their presence would be on the river's terms. Hence, many structures were elevated on stilts so most floods would pass harmlessly beneath them. Even in higher floods where water reached the buildings, most of the furnishings were second and third hand, and losses were simply accepted as conditions of being along the river.

But there was a downside to these floodplain structures. To build clubhouses on the small riverbank lots meant removing trees for the building itself, then removing more trees to improve the vista to the river. Gone with the trees were their root systems that anchored the soil, and soon the riverbanks collapsed, threatening the clubhouses themselves. Owners attempted to stop the erosion with car bodies, refrigerators, broken asphalt and concrete slabs and other junk. Meanwhile owners upgraded from outhouses to flush toilets, but lacked space for adequate septic systems. Hence sewage often leached into the river. And finally, the structures were in transition from seasonal use to permanent low income homes. For this group of people, the clubhouse contained their best and only furnishings, their family treasures.

## Riparian Corridor

Another factor considered by the Meramec Greenway Coordinating Committee in its planning effort was the riparian corridor. This was a strip of land adjacent to both sides of the river, extending back about 300'. This corridor is as important to the stream as skin is to you or feathers are to a bird. In other words, it is essential to the health of the river.



Meramec Clubhouse

A natural, functioning riparian corridor stabilizes riverbanks, reducing erosion and improves water clarity. Its forests increase absorption, filter non point pollutants and reduce flood water velocity. The shade from overhanging trees cools the water to the benefit of the aquatic fauna, and certainly it improves the scenic vista of the river corridor.

The presence of hundreds of clubhouses along the Meramec riverbank devastated the riparian corridor, contributing significantly to the overall decline of the river resource.

#### Flood Insurance

Owners of structures along the river found that few insurance companies offered flood insurance, and for those that did, the cost was prohibitive. The companies realized, of course, that floods were not a possibility, but a certainty, a frequent certainty.

In 1968 the National Flood Insurance Act became law. This Federal program enabled property owners in participating communities to purchase flood insurance at reasonable cost as protection against flood losses in exchange for state and community floodplain management regulations that reduced future flood damages. For the government, now functioning as an insurance company, this was initially a money loser. But the floodplain management regulations restricted new construction unless the structures were flood-proofed, prohibited the repair of badly damaged existing structures, and provided voluntary buyout programs for those wishing to escape flood prone areas. While an immediate goal was to assist people living in floodplains, the ultimate goal was to eliminate flood damages.

#### Buyout Policy

As the Meramec Greenway Coordinating Committee finalized their recommendations, more guidance came from a study by the Missouri Department of Natural Resources in 1981, *Out of Harm's Way*. This study provided area governments with a "plan of action" to reduce rising costs from flood damages, specifically focusing on the lower Meramec River. It recommended nonstructural measures, with the purchase and removal of high risk flood prone structures being the major of several recommendations.

This essentially became the Meramec Greenway's policy recommendation, which was endorsed and implemented by member governments.

#### Floods and Buyouts

Following the record 1982 flood the Coordinating Committee submitted a proposal to FEMA (Federal Emergency Management Agency) for buyouts of damaged structures on behalf of three member governments, Arnold, Fenton and St. Louis County.



Meramec Riparian Corridor

Impressed with this intergovernmental cooperation, \$1.2 million was made available and resulted in the successful buyout of 87 structures from willing sellers. The structures were removed and land conveyed to the appropriate governments.

Hence began an ongoing program of FEMA assistance in purchasing structures, continuing through the large buyout following the floods of 1993-1995.

Equally significant were the actions of the member governments. From bond issues, donations and from within their budgets funds came available and were used to purchase many more of the structures.

In 2000 a new partner, the Great Rivers Greenway District, became involved. Their mission is to develop a network of greenways and trails in the St. Louis region, and the Meramec Greenway is a significant component of their "River Ring" plan. While only St. Louis County of the three Meramec Greenway counties is currently in the District at this time, GRG has actively acquired Greenway lands in that county. Their acquisitions, and those of FEMA and the partner governments, continue.

By 2008 the number of structures in the lower fifty miles of the Meramec floodplain dropped from 1,976 in the late 1970's to 303, an 85% reduction. This included the removal of more than 400 structures from the municipality of Times Beach. It was a combination of the presence of a toxic poison dioxin plus the devastating flood of 1982 that led to the buyout and removal of this entire community.

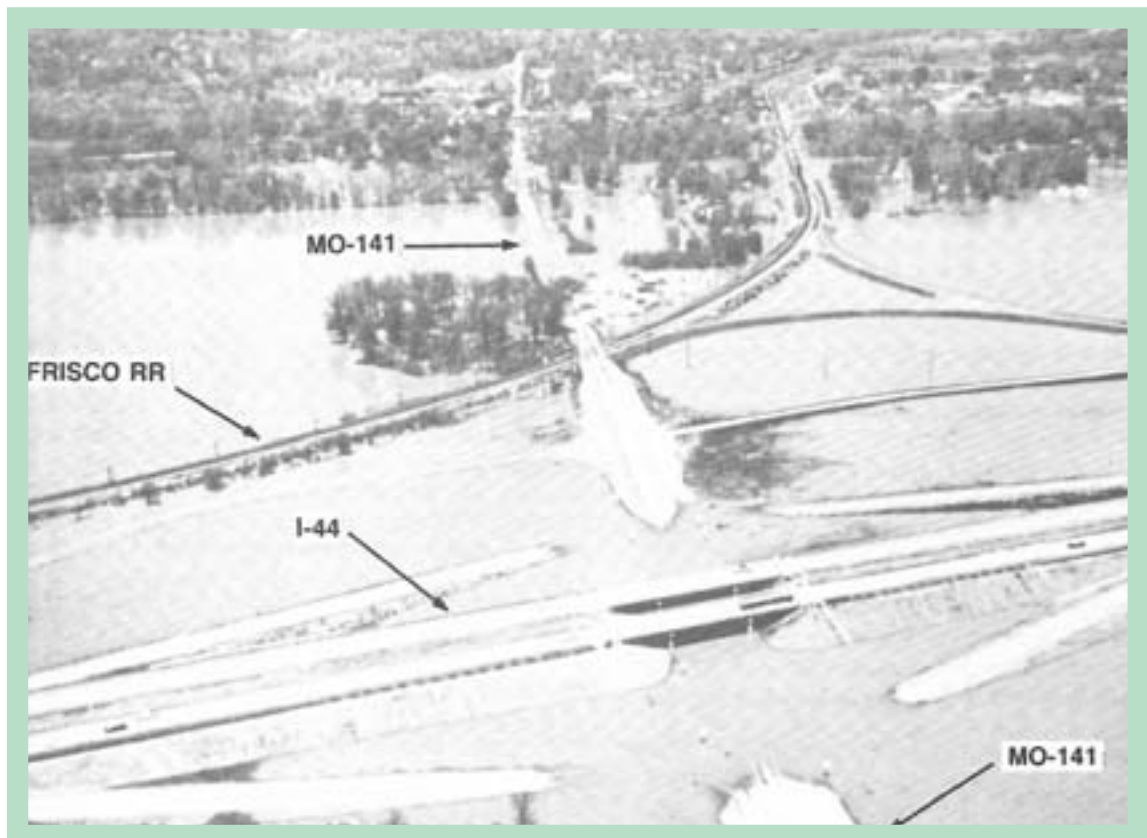
All of the governments within the Meramec Greenway reduced the number of structures within their jurisdictions except the Village of Peerless Park. A municipality of less than fifty citizens, located at the intersection of Interstate 44 and Missouri Highway 141, it chose not to participate in the National Flood Insurance Program, and instead promoted floodplain development. While this meant that the property

owners could not obtain flood insurance, they were permitted to elevate their floodplain properties prior to building. The number of structures in Peerless Park in the late 1970's totaled 62 and in 2008 was 50. Of that 62 most were river front clubhouses that were removed. Hence most of the current structures are recent developments. Peerless Park disincorporated in 1999.

The media attention given to the 2008 flood focused on the few remaining structures in the valley. Ironically, most of those shown being sand bagged had declined the opportunity to sell in the past. Little coverage discussed what did not happen, such as in the City of Arnold, where in 1982 more than five hundred structures were ravaged. All were gone by the 2008 flood.



*Above:* Peerless Park area in 2008.  
*Below:* Peerless Park area in 1961.



## Flood History

The March 2008 Meramec flood reached a height of 38.83 at Valley Park, and represented, per the National Weather Service, the third highest flood in the century since records have been kept of that area. It was topped only by the massive flood of December 1982 (39.73 elevation) and the great flood of August 1915 (37.85 elevation). Interestingly, the 1915 flood was the result of an unusual outside force. A Gulf hurricane drifted northward, dumping torrential rains on the Meramec watershed.

On the National Weather Service's ten most serious recorded floods at Valley Park, eight have occurred in the twenty-six years since 1982. This delivers a clear statement that flood events are increasing, and further validates the decision to remove floodplain structures from the valley.

The reasons for this increase in flooding are twofold. First, the lower Meramec watershed has urbanized with the outward sprawl of St. Louis. Asphalt roads and parking lots, concrete driveways and suburban lawns can absorb far less precipitation than natural vegetation cover, resulting in stormwater surges down the tributaries to the Meramec. Second, obstructions within the floodplain hinder or prohibit the flow of flood waters within the valley, causing increased flood heights. The classic example of the latter is where Interstate 44 and Missouri Highway 141 intersects. Obstructions here include road and railroad embankments across the valley, a levee and filling in the floodplain. Obvious impacts include the frequent closing of Highway 141 and even Interstate 44 in the 1982 flood.

## The Greenway Emerges

Lands acquired in the Meramec Greenway come under the ownership and/or management of governments along the river. Structures and debris are removed. Much of the debris removal is attributed to the work of thousands of citizens, volunteering their time and energy through the St. Louis Open Space Council's "Operation Clean Stream" and the efforts of many Stream Teams on the Meramec.

The lands, especially those along the riverbank in the riparian corridor, are allowed to return to natural forest, hence restoring that corridor and the well being of the entire river ecosystem. Trails in this area provide access to explore and reach the river itself with minimal impact. Public floodplain lands back from the river provide a diversity of recreational opportunities including ball fields and picnicking. Improvements to these lands, such as pavilions and restrooms, are constructed to ride out floods with little more than cleanup to get them functional again. Elsewhere in the floodplain large public acreages are returned to their original forests, prairies and wetlands, much to the benefit of area wildlife.

## Conclusion

Thus we suggest that one of the most significant stories from the Meramec River Flood of 2008 is what didn't happen. Though final damage cost figures are not yet available, certainly what didn't happen was the millions of dollars to damaged structures in the valley, because those structures were no longer there. What didn't happen was the tragedy to hundreds of families caught in the flood.

Certainly problems remain to be addressed in the Meramec Valley, and these include assisting people remaining in the valley to relocate to safer places. Hence the buyout programs will continue. But what seemed an almost impossible task in the early years of the Meramec Greenway, with its nearly two thousand structures in harm's way, has been largely achieved to the benefit of all.



Structures damaged by the flood of 1982 in Fenton.



Location of above structures as it appears today as part of the Fenton Meramec Greenway.