

City of St. Louis Permeable Pavement Alley Pilot Study



The City of St. Louis Board of Public Service (BPS) formed a partnership with Missouri Department of Conservation (MDC), Metropolitan St. Louis Sewer District (MSD), Southern Illinois University – Edwardsville (SIUE), East-West Gateway Council of Governments (EWG), and [CH2M HILL](#) in 2007 to find ways to incorporate low impact development (LID) techniques into City of St. Louis improvement projects. The team identified pervious pavements as the first and best management practice (BMP) to investigate due to the multiple benefits it provides and the ample opportunity to utilize the practice in City-owned projects.

Geyer Alley: This former brick and asphalt alley was converted into a permeable paver alley. Photo courtesy of CH2M HILL, Inc.

Impervious surfaces, such as roads, rooftops and sidewalks within the City of St. Louis increase flows into MSD's combined sewer system as well as contribute to the urban heat island effect. Converting impervious surfaces to pervious pavement reduces stormwater runoff, captures peak flows, replenishes water tables and aquifers, minimizes flash flooding and standing water, prevents polluted water from entering the streams, mitigates surface pollutants and reduces heat island effect.

To assess the effectiveness of pervious pavement options in the City of St. Louis the partnership chose to conduct a pilot project within Ward 6. An onsite meeting with City of Chicago staff was held to build on knowledge they had gained through their pervious alley initiative. The team identified three alleys to test the relative effectiveness of the proposed pavements (pervious pavers, pervious concrete and pervious asphalt) in reducing water quantity and improving water quality entering MSD's combined sewer system.

Flow metering and water quality monitoring was conducted on each alley to create an existing system baseline. In early 2011, flow metering and water quality monitoring will occur at the same locations over the same time period to determine post-development conditions. The results of the data will be analyzed to determine the impact made by the three pervious pavements and will be used to inform City of St. Louis policies relating to alley paving. The data is anticipated to show which of the pavement types provides the greatest reduction and, combined with construction cost information, will provide the City with the best method moving forward. The data will also be used to promote change in private developments and other City paving projects where appropriate. Finally the results will be used by MSD to determinate if permeable pavements can be used as stand-alone BMPs.



Cardinal Alley (Left): This old brick alley was converted into a pervious asphalt alley. **Eads Alley (right):** This former asphalt alley was converted into a porous concrete alley. Photos courtesy of CH2M HILL, Inc.