Recommendations of the City of Milwaukee Flooding Study Task Force

Approved June 10, 2011

The City of Milwaukee Flooding Study Task Force (FSTF) was created by immediate adoption of Common Council file #100418 on July 27, 2010. The charge of the task force was to recommend remedies for storm water and sewage backup flooding of city residential and commercial properties, and flooding of streets and alleyways. The FSTF met on nine occasions between January 6, 2011 and June 10, 2011.

The information provided to the FSTF demonstrates that multiple factors contribute to the problem of basement flooding. There is no single action that can be taken that will correct the problem. The issues of street flooding, basement flooding and sanitary sewer overflows are all different aspects of the effect of urbanization on the hydrology of the region. The problem has been aggravated by deteriorated infrastructure, deficient city building code regulations prior to 1955, and recent extreme rainfall events. The FSTF finds that the risk and frequency of extreme weather events is increasing and city planning efforts need to adapt to a changing climate.

The city has placed a high priority on upgrading city maintained storm and sanitary sewer related infrastructure and currently budgets for a sizeable public investment in its sewerage system each year. Notwithstanding this investment, the basic challenge faced by the city and the region is to continuously improve the infrastructure and urban landscape in order to keep clear water out of the sanitary sewers; to manage storm water to reduce the rate and volume of peak storm water runoff; and to provide adequate outlets for storm water during extreme precipitation events. Given that private property sources account for between 60% and 80% of the clear water that is entering and inundating sanitary sewer systems, any attempted solution to basement flooding will need to substantially address those private property sources.

The problems that the FSTF was asked to address are not new and have developed over decades. The solutions will likewise require a long-term effort, significant public investment and the political will of policy makers to make difficult decisions for the collective good of the community.

The City of Milwaukee Flooding Study Task Force forwards the following recommendations to the Common Council recognizing that these recommendations are subject to appropriate state and local funding levels.

- For stormwater management purposes, the City should adopt the new rainfall frequency information anticipated to be released in 2012 as National Oceanic and Atmospheric Administration Atlas 14 for the Upper Midwest.

- MMSD should work with communities within its service area to develop a new regional storm water retention standard for new development and redevelopment projects.

- The City should work with the Milwaukee Metropolitan Sewerage District (MMSD), the Southeastern Wisconsin Regional Planning Commission (SEWRPC) and the Wisconsin Initiative on Climate Change Impacts to keep abreast of possible climate change trends and incorporate emerging climate models and rainfall frequency data into sewer design criteria and other urban planning efforts to better meet expected weather conditions.

- The City should evaluate its experiences with existing green infrastructure improvements and develop policies to incorporate future green infrastructure into development, re-development and street construction efforts. The green infrastructure policies should give priority to areas with flooding problems. Examples of green technologies include rain barrels, cisterns, rain gardens, green roofs, storm drain restrictors, porous pavement, median and roadside bio-retention projects, catch basin retrofits, storm water planters, vacant lot bio-retention, increased tree canopy, and downspout disconnection.

- The City should work with MMSD and the State of Wisconsin to evaluate the feasibility of revising city building codes and zoning ordinances to incorporate greater protections for homes from backwater incidents. These changes could include requiring downspout disconnection; the disconnection of foundation drains; the rehabilitation or replacement of faulty sewer laterals; and a requirement for hung plumbing for newly constructed properties with basements in critical backwater areas.

- The Department of Public Works should complete the Private Property Inflow & Infiltration (I&I) Demonstration Project. The results from the demonstration project and other I&I improvements made within the DNR stipulated sewersheds should be comprehensively assessed and used to evaluate improvements based upon their cost-effectiveness and ability to reduce future basement back-ups. These results should be used to consider the feasibility of a comprehensive Private Property I&I Reduction Program and to determine an implementation and financing strategy for such a program. Future programs should prioritize homes with repeated basement backups and identified poorly performing sewer sheds areas.

- The City should continue to evaluate areas that have a history of surface flooding to identify measures that will improve appropriate storm water flow paths and identify management measures that will address deficiencies.

- City staff should continue to work with MMSD to identify locations where the MMSD Metropolitan Interceptor Sewer (MIS) could surcharge into a municipal sanitary sewer during a large storm, to establish critical elevations at connections to the MIS, and to pursue possible MIS and/or local system upgrades to minimize basement backups in such situations.

- The City should work with the Village of Shorewood and MMSD to develop an official policy regarding targeted separation of the combined sewers in areas

where timing and volume generate a high risk of inflow-induced backups and where limited utility connections and an accessible outlet allow for separation to be cost-effective.

- MMSD and the City should evaluate the combined sewer area to consider the establishment of targeted zones where a mandatory downspout disconnection program may be implemented. This policy should establish reasonable standards for exempting properties, such as unreasonably small lot sizes, or minimal front or side setbacks.

- The City should collaborate with Milwaukee County to determine where existing parkland can be improved to provide stormwater benefit to areas with significant surface flooding. This might include "reshaping" portions of the parkland to create wetland parks.

- Additional finances will be needed to fund an effective flood prevention program. The City should aggressively pursue increased State and Federal assistance in flood mitigation projects. This may include financial assistance through programming and grant opportunities, and the restoration of funding resources to the Clean Water Fund.

- Based on the results of the City's demonstration projects and other appropriate data, the City should implement a financing strategy which may include some form of cost recovery for identified private property I&I mitigation improvements.

- The Department of Public Works should provide an annual report to the Common Council on its efforts and projects to reduce the risk of flooding in the City of Milwaukee. This report should be made in coordination, where applicable, with MMSD, the Department of City Development, the Department of Neighborhood Services and Milwaukee County relating to cooperative projects. As part of its annual capital budget request, the Department of Public Works should clearly note particular capital improvement locations that will reduce the risk of flooding or basement backups. This recommendation is intended to more closely integrate flooding reduction into the City's capital planning process and improve communication with the public on the City's efforts.

- The City and MMSD should continue their efforts to better educate the public on the causes and effects of sewer and flooding issues and the remedies at hand. Other partnerships, such as with the City of Milwaukee Public Information Division should be established to create educational pamphlets and articles for Aldermanic newsletters and the City's web site, as well as creating opportunities for City/MMSD representatives to make presentations at town hall and neighborhood meetings. Early education should focus on the interrelationships between the public and private portions of the sanitary sewer system and low cost improvements like properly grading properties, use of rain-barrels and construction of private property rain gardens.

- Incorporating existing studies and data, the function and continued use of the Estabrook Dam should be weighed with the intended purpose of improving water flow and reducing flooding episodes in the Lincoln Creek and Milwaukee River watersheds. The FSTF also recommends that the appropriate City of Milwaukee body extend an invitation to Milwaukee County and other appropriate parties to provide communication on the progress and efforts of ongoing studies, plans and projects related to the Estabrook Dam.

- The City should not consider recommending or endorsing any outside lateral insurance plan unless the plan is devised to cover the scope of work required to remedy identified I&I issues and not just catastrophic breaks.

- While the City should allow the private installation of back-up prevention devices, the City should not fund or subsidize any cost associated with the devices.

Appendix

The City of Milwaukee Flooding Study Task Force was comprised of the following members:

Ald. Ashanti Hamilton	Co-Chair
Ald. James A. Bohl	Co-Chair
Gerry Novotony	
Rep. Sandy Pasch	
Jeff Polenske	
Kevin Shafer	
Erick Shambarger	
Ken Yunker	

The FSTF was assisted by the following staff:

- Tobie Black – Staff Assistant
- Aaron Cadle – Legislative Liaison
- Kathleen Brengosz – Fiscal Planning Specialist

The FSTF met on the following dates:

- January 6, 2011
- January 20, 2011
- February 24, 2011
- March 10, 2011
- March 24, 2011
- April 14, 2011
- April 28, 2011
- May 13, 2011
- June 10, 2011