Methods for Improving Stormwater Drainage, Reducing Flooding, and Minimizing Basement Backups
City of Brookfield - June 2008

Maintain unobstructed flow in streams, drainage ways and easements.

- Identify obstructions including structures, fences, grading, landscaping, etc.
- Remove obstructions with City forces if in public ways
- Work with neighboring municipalities to clear drainageways
- Order removal of obstructions if on private property or in easement
- Issue citations if obstructions are not removed
- Continue to clean out storm sewers as needed
- Continue to clear debris from inlets and culvert end sections as needed
- Develop an "Adopt an Inlet" program and encourage property owners to keep inlets in front of their property clear of debris

Increase capacity of drainage ways and storm sewers

- Continue moratorium on ditch enclosures
- Consider removal of ditch enclosures in trouble spots
- Re-ditch as necessary to improve hydraulic capacity of "filled-in" ditches
- Continue implementation of storm sewer improvements based on latest studies

Implement sanitary sewer improvements

- Continue proactive approach in identifying and repairing leaking manholes and sanitary sewers, both public and private
- Implement sanitary sewer capacity improvements identified to date
- Upgrade current SCADA system to provide for remote operation of lift stations

Consider a private sector inflow and infiltration reduction program

- Perform a one-time inspection of private property for code violations and recommended improvements
    - sump pump connections
    - private sewer laterals
    - extensions on downspouts and sump pump discharge
- Institute a time of sale inspection for code violations and recommended improvements
    - sump pump connections
    - private sewer laterals
    - extensions on downspouts and sump pump discharge
- Check loading docks and entrances to underground parking for compliance with codes (drains must discharge to storm sewer)
- Check underground parking to keep flood waters from inundating the lots (current code requires drains in underground parking to drain to sanitary sewers. So if the underground parking floods, this drains to sanitary sewers causing basement backups).
    - require underground parking to floodproof the lot
    - require underground parking to pump floor drains

Inform and educate the public

- Inform residents who have drainage easements on their property of the importance of keeping said easements clear and unobstructed
- Develop and distribute informational flier identifying what property owners can do to keep stormwater away from their house
    - properly grade yard away from structures
    - repair leaking and cracked basement walls and cracks in basement floors
    - regularly clean out gutters and downspouts
    - make certain downspout extenders are attached to downspouts
    - extend downspouts and sump pump discharge away from the house and away from neighboring houses
    - discharge downspouts overland and not to storm sewer or ditch
    - mudjack or replace settled patios, driveways or sidewalks
    - check sump pump operation regularly
    - buy a large enough sump pump to handle flows and properly size fuses or circuit breakers for the pump
    - discharge sump pump above grade to avoid pumping against the pressure of a storm sewer or ditch that is full
    - consider installing a battery backup or generator for sump pump in case of power failure
    - consider installing an additional sump pump, increase capacity of existing sum pump, or have on hand a spare sump pump with hose to discharge outside during an emergency
    - do not install mulch or floatable materials (firewood) in known drainageways as it can plug inlets and culvert pipes
    - do not install structures or landscaping in stormwater drainage easements
    - cooperate with WE Energies to trim branches or remove trees near power lines. This improves reliability of power by reducing the potential for downed power lines caused by downed trees
    - request the City to remove ditch enclosures to allow for more storage of water in the ditch
    - request the City to re-ditch ditches that have filled in over time
- Develop and distribute informational flier identifying what property owners can do to prevent basement backups in the City
    - explain how storm water drainage, flooding and basement backups are related
    - follow recommendations for keeping stormwater away from the house
    - do not allow stormwater drainage or sump crock overflows to go down floor drain
    - do not bail sump crock into laundry tub or toilets or shower drains
    - consider installation of a backwater valve or hung plumbing
- Include articles in the City Newsletters
- Post information on City's website regarding drainage