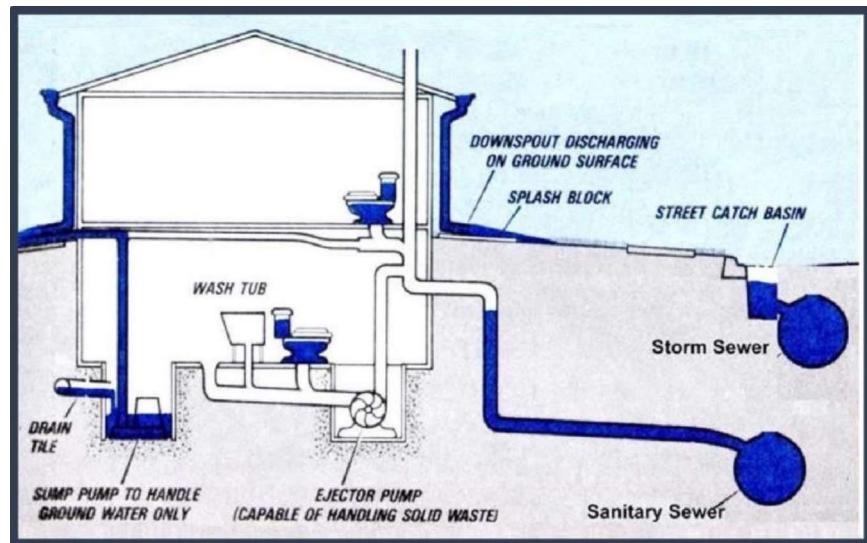


PLUMBING: OVERHEAD SEWER SYSTEMS

An overhead sewer is generally viewed as the most cost-effective sewer backup protection measure for residential basements. A sump is installed under the basement floor to intercept sewage flowing from basement fixtures and the basement floor drain. An ejector pump in the sump pushes sewage up above the flood level. From there it can drain by gravity into the sewer service line. Plumbing fixtures on the first floor continue to drain by gravity to the service line. If the water level in the municipal sewer system reaches an elevation of the overhead sewer where it exits the structure, a check valve in the pipe from the ejector pump keeps the water within the pipes. An overhead sewer can help prevent water flowing from the exterior to the interior of the structure through the sanitary sewer and/or stormwater drainage systems and should be considered for sanitary sewer drainage systems with fixtures below the flood protection level.



MWRD. August 2015. *Technical Guidance Manual for the Implementation of the Watershed Management Ordinance*.

ADVANTAGES	DISADVANTAGES
<ul style="list-style-type: none"> Human intervention is not required for an overhead sewer to work and More dependable than a standpipe or backflow valve. 	<ul style="list-style-type: none"> Increased risk of structural damage, since hydrostatic pressures on the basement walls and floor cannot equalize, Require periodic maintenance, and More expensive than a standpipe or backflow valve.

DESIGN CONSIDERATIONS

Some specific design considerations to keep in mind before installing an overhead sewer include anticipated water level, source of basement flooding experienced, strength of the existing foundation walls and floors, plumbing connections inside the structure, condition of the service lateral between the municipal sewer and the structure, groundwater elevation and the location of the sump pit. In addition to the plumbing required for an overhead sewer, a battery backup or generator is also recommended. The ejector pump requires electricity to work, which is more likely to occur during a storm event when the ejector pump is needed.

CONSTRUCTION AND COSTS

Although more dependable than a standpipe, an overhead sewer is more expensive. A plumbing contractor must reconstruct the pipes in the basement and install the ejector pump.

MAINTENANCE

Common maintenance practices for overhead sewers include maintenance of the ejector pump, cleaning the sump pit, cleaning the pump inlet screen, cleaning, inspection and oiling of the sump pump, adjusting the float on the pump and replacement of the pump as needed.

FLOOD REDUCTION

Overhead sewers are typically installed in most new residential homes and can be retrofitted into an existing structure to provide added protection from flooding of below ground areas. The flood reduction is limited to the individual structure and these systems are not intended to protect a structure from overbank flooding or basement seepage in areas with high groundwater tables.