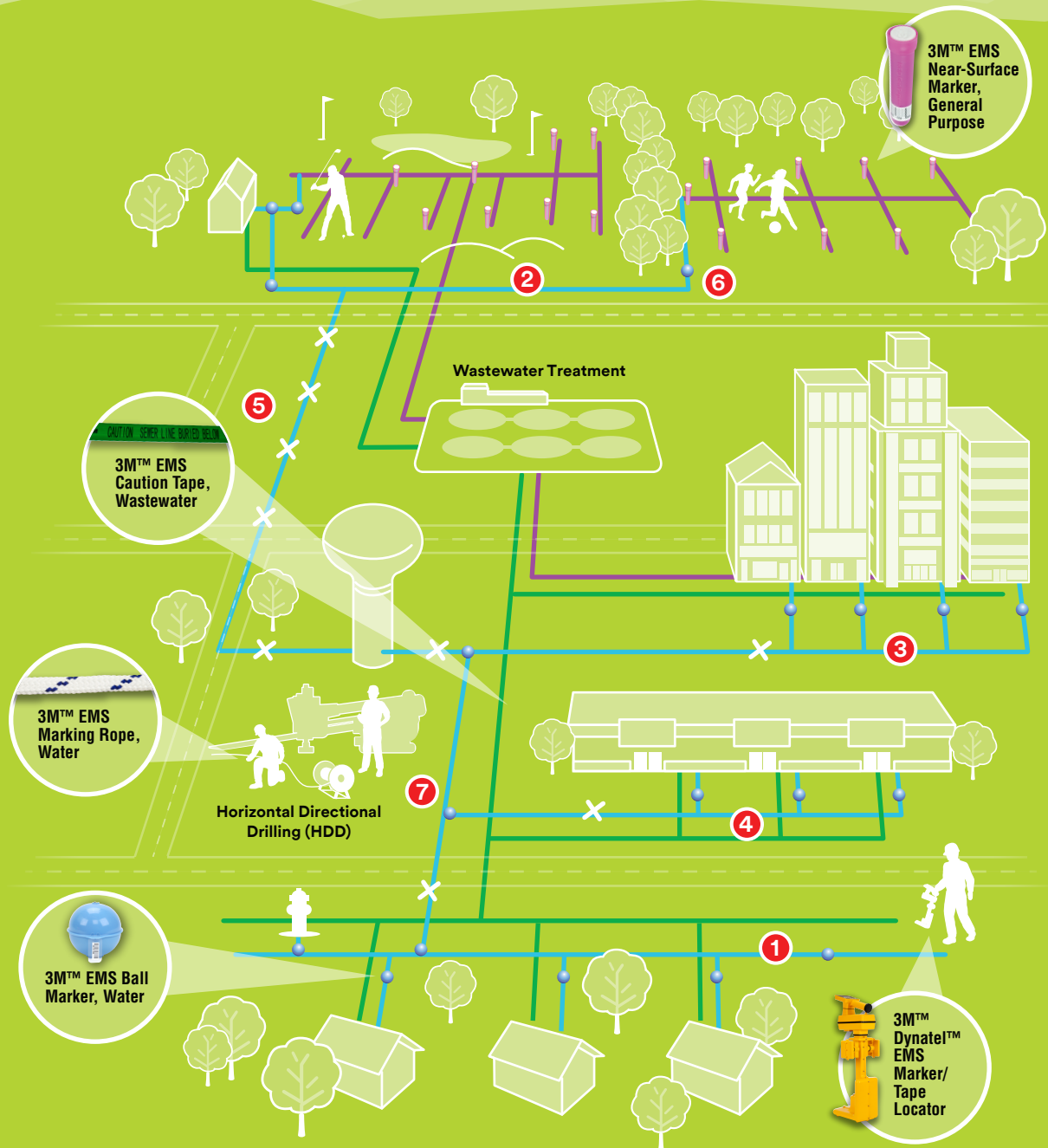


Locating and Marking Application Guide for Water Utilities



- 1 Main or Service Stubs**
 - High likelihood need to connect later or due to new construction
 - Pinpoint location of connection point where a locator may not provide the needed level of accuracy
 - Stubs often get knocked down or covered when their end is above ground
- 2 Main or Service Repair Locations**
 - Higher risk point for future failures, where to look first when there's an issue
 - Easily able to identify and map
 - Ease of identification using a marker and precise positive location
- 3 Main to Service Connection**
 - Marker clearly defines the location of the facility
 - If connection point and premise point can be identified, may improve ability to determine the path of the service line
 - Provides a good starting point
 - Poor locatability due to ungrounded tracer wire
 - High risk point for excavation damage, often most vulnerable location for strikes
- 4 Shutoff Valve and Meter**
 - Not easily locatable and needs to be located quickly
 - Sometimes paved over, covered with vegetation or snow pack
 - Can serve as an aid with emergency response to shut off valves
 - Change of direction can make them broadside to the path of the utility, making it vulnerable to being hit
- 5 All Joints, Fittings and Changes in Direction**
 - Logical point of failure (leak)
 - Assists in path marking of critical assets
- 6 Ball and Near Surface Markers**
 - Depth of cover confirmation, location of conduit, location accuracy for future road work
 - Deep dive markings on each side of road to confirm utility location after bore, find buried or sawed-off conduits
 - Identify facility in high congestion, high traffic area
 - Identify facility in area of future construction
- 7 Path Marking**
 - 3M EMS Caution Tape and Rope
 - For use in open trench and HDD (Horizontal Directional Drilling) applications
 - A maintenance free solution for marking and locating the path of underground plastic pipes and casing.

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