Criteria for Evaluating HydInfra Inspection Data

Data quality is essential for District personnel to accept and use HydInfra. HydInfra data is being used to quantify the need for pipe repairs that will be done by Maintenance forces and in scoping construction projects. The following notes were written to help District HydInfra Key Users gage the consistency of inspection **data collected since 2004**.

➢ **Compare the Overall Condition Code to the Repair flag value:**

- o Condition 1 or 2 should have Repair = N
- o Condition 3 or 4 should have Repair = Y
- o Condition 0 should have Repair = (blank) -- a blank is also called "null", meaning "no answer" or unknown)

➢ **Compare flags to Pipe Material:**

- o Metal pipes in Condition 4 usually have holes but no joint separation.
- o Concrete pipes in Condition 4 usually have joint separation but no holes.
- o Plastic pipes in Condition 4 may have deformation or cracks.
- o Inspection flags may give clues that pipe material is in error.

➢ **Compare individual flags to see if the condition rating is plausible:**

- o **Condition 0**
    - Repair = (Null)
    - Visual Inspection = Partial Visual
    - Flags should indicate that the inspector couldn't rate the pipe because the view was obscured by water or sediment:
        1. Clean = Y
        2. Plugged = Y
        3. Silt = Y
        4. Standing Water = Y
    - Other flags are likely to be Null values.

- o **Condition 1**
  - REPAIR = N
  - REPAIR_UNDER_ROAD = N (or Null)
  - All or almost all flags should = N
  - Exceptions are Clean, Silt or Standing Water which could be = Y

- o **Condition 2**
  - REPAIR = N
  - At least one flag should indicate a potentially minor structural problem, possibly including:
    1. PITTING_RUSTING =Y
    2. JOINTS_SEPARATED =Y
    3. INFILTRATION =Y
    4. CRACKS =Y
    5. (Infiltration, cracks and joint separation may also show up in other condition codes)
  - Flags that indicate a clearly serious structural deficiency should be "N":
    1. REPAIR_UNDER_ROAD = N
    2. PIPING = N
    3. HOLES = N
    4. DEFORMED_PIPE = N
    5. INSLOPE_CAVITATION = N
    6. VOID_IN_ROAD = N

- o **Condition 3**
  - REPAIR = Y
  - Should have at least one flag that could indicate a serious structural deficiency:
    1. INFILTRATION =Y
    2. SPALLING_FLAKING =Y
    3. MISALIGNMENT =Y
    4. JOINTS_SEPARATED =Y
    5. CRACKS =Y
    6. HOLES =Y
    7. DEFORMED_PIPE =Y
    8. INSLOPE_CAVITATION =Y
    9. EROSION =Y
    10. ROAD_DISTRESS = Y

- o **Condition 4**
  - REPAIR = Y
  - Flags clearly indicate a serious structural problem (and likely Condition 4) are:
    1. REPAIR_UNDER_ROAD = Y
    2. PIPING = Y
    3. HOLES = Y
    4. DEFORMED_PIPE = Y
    5. VOID_IN_ROAD = Y
  - Other flags that could indicate Condition 4 are:
    1. INFILTRATION = Y
    2. MISALIGNMENT = Y
    3. JOINTS_SEPARATED = Y
    4. CRACKS = Y
    5. INSLOPE_CAVITATION = Y
    6. ROAD_DISTRESS = Y