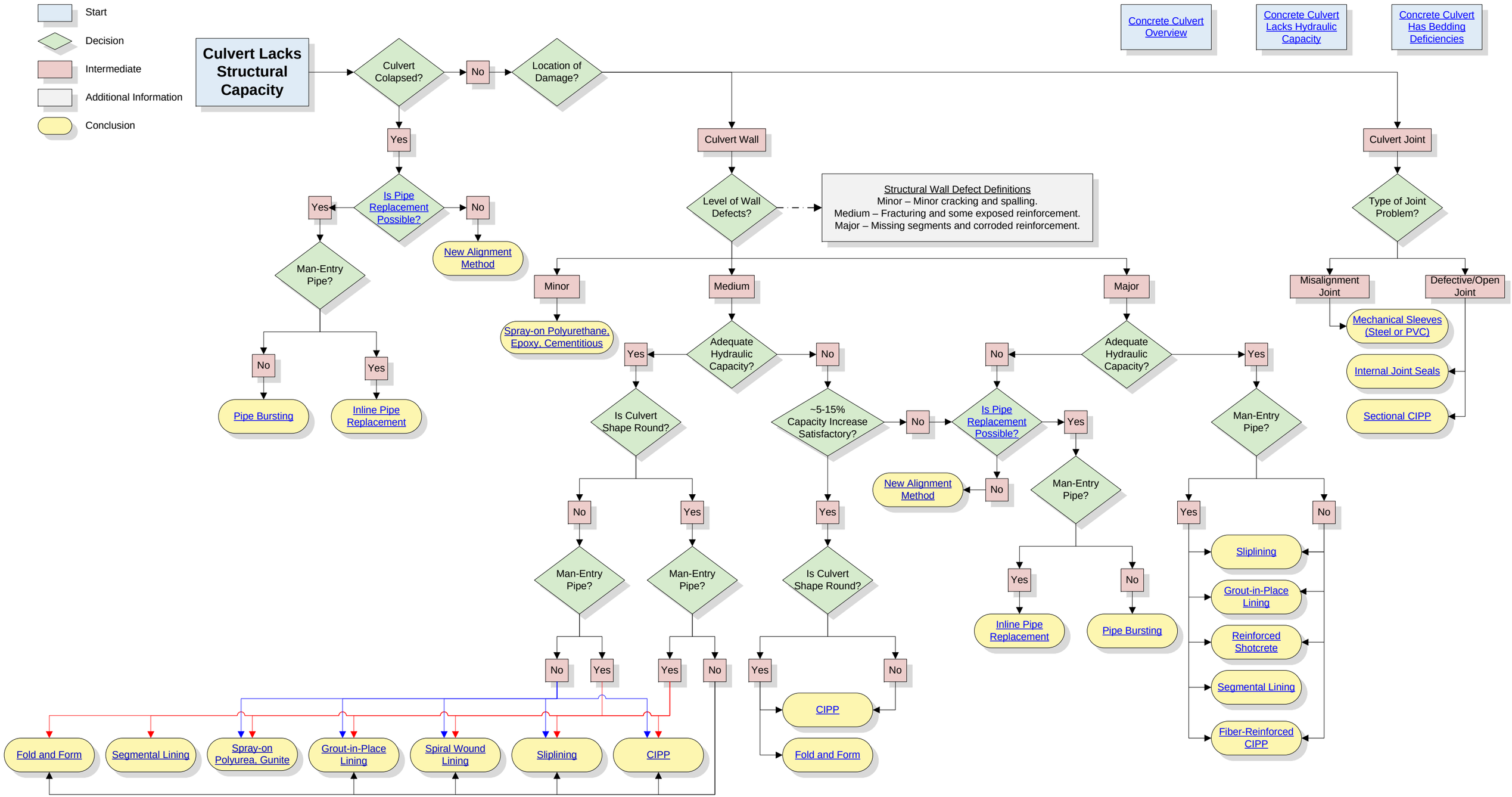
Start
Decision
Intermediate
Additional Information
Conclusion
Culvert Lacks Structural Capacity
Culvert Colapsed?
No
Location of Damage?
Yes
Is Pipe Replacement Possible?
Yes
No
New Alignment Method
Man-Entry Pipe?
No
Yes
Pipe Bursting
Inline Pipe Replacement
Concrete Culvert Overview
Concrete Culvert Lacks Hydraulic Capacity
Concrete Culvert Has Bedding Deficiencies
Culvert Wall
Level of Wall Defects?
Structural Wall Defect Definitions
Minor – Minor cracking and spalling.
Medium – Fracturing and some exposed reinforcement.
Major – Missing segments and corroded reinforcement.
Minor
Medium
Major
Spray-on Polyurethane, Epoxy, Cementitious
Adequate Hydraulic Capacity?
Yes
No
Is Culvert Shape Round?
~5-15% Capacity Increase Satisfactory?
No
Is Pipe Replacement Possible?
Yes
No
New Alignment Method
Man-Entry Pipe?
Yes
No
Inline Pipe Replacement
Pipe Bursting
Adequate Hydraulic Capacity?
No
Yes
Man-Entry Pipe?
Yes
No
Sliplining
Grout-in-Place Lining
Reinforced Shotcrete
Segmental Lining
Fiber-Reinforced CIPP
Is Culvert Shape Round?
No
Yes
Man-Entry Pipe?
Man-Entry Pipe?
No
Yes
Yes
No
Yes
No
CIPP
Fold and Form
Fold and Form
Segmental Lining
Spray-on Polyurea, Gunite
Grout-in-Place Lining
Spiral Wound Lining
Sliplining
CIPP
Culvert Joint
Type of Joint Problem?
Misalignment Joint
Defective/Open Joint
Mechanical Sleeves (Steel or PVC)
Internal Joint Seals
Sectional CIPP