

*Metropolitan Atlanta Municipalities:  
Manhole Inspection*

<b>Project:</b>	Manhole Inspection
<b>Clients:</b>	DeKalb County, City of East Point, City of Atlanta, City of College Park
<b>Location:</b>	Throughout Metropolitan Atlanta
<b>Completion:</b>	Ongoing

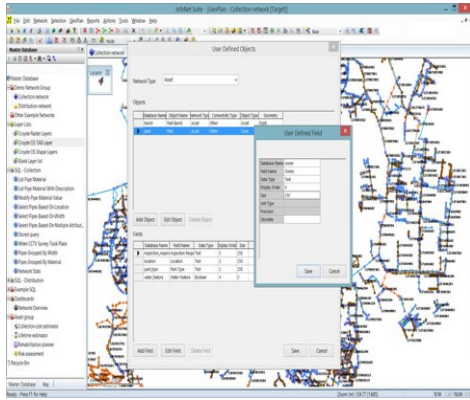


In performing the manhole condition assessments, MME field inspection personnel are trained and certified to account for the following:

- (a) General:
  - i. Manhole identification as provided by East Point City maps
  - ii. Address
  - iii. Location (pavement or easement)
  - iv. Size and condition of cover
  - v. Condition of ring and frame,
  - vi. Material
  - vii. Size of manhole
  - viii. Inlet and outlet pipe sizes.
- (b) Structural
  - i. Condition of steps, cone, riser, bench and channel.
- (c) Hydraulic
  - i. Inflow indicators
  - ii. Evidence of surcharging
  - iii. Clarity of flow
  - iv. Flow comparisons with adjacent manholes
  - v. Depth of flow
  - vi. Evidence of vermin
  - vii. Drop manhole (inlet/outlet).



To facilitate uniformity in the preparation of manhole condition assessment reports, MME utilizes either client mandated or other industry standardized inspection forms similar to the form attached.



The information obtained from the completed manhole condition assessment forms prepared in the field are reviewed for consistency and any missing or ambiguous information is revisited and updated based on field clarification. The data from completed and reviewed forms can be used to populate manhole modules within software either mandated by the client or other industry standard software such as InfoNet software. It should be noted that InfoNet is a widely used industry software for evaluating sewer system assets and is presently used by large metro Atlanta utilities.

The InfoNet software has the capability to process the severity of the defects and generate a ranking for each manhole asset, based on structural integrity. In addition, an estimate of I&I potential can also be computed for the manholes using InfoNet in conjunction with a database of Inflow & Infiltration (I&I) values developed from I&I estimates.

A professional engineering review of manhole inspection forms and the use of industry standard software in conjunction with the database of I&I values are tools used for analyzing the condition of manhole inspection data.

Date: \_\_\_\_\_

## MANHOLE CONDITION ASSESSMENT

Page 1 of 2

### 1 - GENERAL INFORMATION

District: _____	Basin: _____	Sewer Shed: _____	
Point ID: _____	DS Point ID: _____	Map No.: _____	
Type: <b>AG- AnglePoint, CSS- CombStorm&amp;Sanitary, CO LH-LampHole, T- Tee, END of Line, MH, STB- Stub, SMT- Summit, DO DischargeOpen</b>		SURFACE COVER TYPE: <b>A - MainRoadUrban, B- MainRoadRural, C- LightRoad, D- FootPath/RoadShoulder, E- Field, F- Garden, G- Woodland, X- DifficultAccess</b>	
Address: _____		SURFACE COVER MATERIAL: <b>A- Asphalt, BML- BldgMoveable, BU- BldgUnmove, C- Concrete, CKC- CreekCross, D- Dirt, EBH- Elev'dBridgeHang, EP- Elev'dPier, F- Fence, G- grass, PA- PipeAboveGround, R- Gravel, S- Sod, TS- Trees/Shrubs, U- Utility, W- Water, Z- other</b>	
Location Comment: _____			

Circle Appropriate  
Answer where codes  
Are embedded in form

### 2 - CHARACTERISTICS

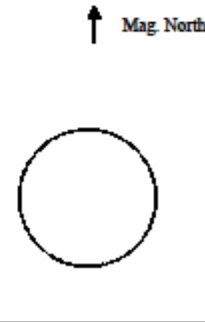
ITEM	TYPE/SHAPE	MAT/ LINER	DEPTH TO BOTTOM	SIZE	MISCELLANEOUS
Cover:		CI-Cast Iron CO-Concrete PL-Plastic	NA		+ / - Grade: _____ inches    Inflow Dish: Yes    No
Frame:	NA	CI-Cast Iron CO-Concrete PL-Plastic			Number of Landings: _____ Number of Steps: _____
Rings:					Comments: _____
Cone:	O- Concentric E- Eccentric			NA	
Wall:					
Bench:	NA			NA	
Channel:	NA				
Base:			NA	NA	
Steps:	NA	CI-Cast Iron RB-Rebar CO-Concrete	NA	NA	

<b>MH Cover Types:</b> B-Bolted, C-Concrete, E-Concealed Pickholes, Open Pickhole, Type A Lift Hole, L-Lockdown, S-Solid, V022-Vented 2 EA.0.5", V023-Vented 2 EA.0.75", V024-Vented 2 EA/1.0", V042, V043, V044, V122, V123, V124, V242, V243, V244 <b>Shapes</b> Rings, Cone, Wall Shape Codes: N-None, C-Circular, R-Rectangle, S-Square	<b>MH Material Codes:</b> BRK-Brick, CLBK-Clay Block, CON- Cast-In-Place Conc, COBK-ConcreteBlock, STON-Cobblestone, FG-Fiberglass, MBK-ManholeBlock, PE-Polyethylene, PRC-PrecastConcrete, ROC-Rock, VCP-VitrifiedClay	<b>MH &amp; Pipe Liner Codes:</b> BL-Bitumin, CPP-CureInPlace, CL-Cement, IS-SoftInversion, PI-Plastic, RL-ResinLiner, XXX-Other, ZZZ-NotKnown	<b>Pipe Shape Codes:</b> A-Arched, B-Barrel (Beer Barrel), C-Circular, E-Egg Shape, H-Horseshoe, O-Oval, R-Rectangular, S-Square, T-Trapezoidal, U-U Shape w/Flat Top, X-Other (Comments)	<b>Pipe Material Codes:</b> AK-Alkathene, AC-Asbestos Cement, BR-Brick, CI-Cast iron, SI-SpunGreyIron, CMP-CorMetalPipe, CSB-ConcSegBolt, CSU-ConcSegNoBolt, CO-Concrete, CC-BoxCulvert, DI-DuctileIron, GDC-GlassReinConc, GRP-Fiberglass, PSC-Plastic/SteelComp, PE-Polyethylene, PLP-PVCFold&Form, PVC, RCP-ReinConc, RPM-ReinPlastic, Matrix, ST-Steel, VC-ClayPipe, PP-PolyPropylene, WOD-Wood, PF-Pitchfibre, MA-Masonry, XXX-Other, ZZZ-NotKnown	<b>Notes:</b> 1. 'Depth to Bottom' and 'Entry Depth' are measured in feet to the nearest hundredth of a foot. Measure from center of cover to the bottom/invert of the object being measured.  2. 'Size' is measured in feet to the nearest hundredth of a foot.
---	--	---	--	--	---

Step Codes: CI-Cast Iron, CO-Concrete, PL-Plastic, BRK-Brick, RB-Rebar  
 Note: If Pipe SHAPE is not round, give Height x Width    Pipe Type Codes: C-Combined, F-Foul, S-SurfWater, T-Trade Effluent, W-Watercourse (culvert), X-Other, Z-NotKnown

### 3 - PIPE DATA

NO.	IN/OUT	SIZE	SHAPE	MAT'L	ENTRY DEPTH	ENTRY CLOCK	LINER	COMMENTS (Also indicate whether CCTV should be performed on pipe for locating connecting manhole)
1	OUT							
2								
3								
4								
5								
6								
7								
8								



Manhole Condition Assessment

PointGISID \_\_\_\_\_

### 4 - MANHOLE SKETCH

Crew \_\_\_\_\_

### MANHOLE CONDITION ASSESSMENT

#### 4 – INSPECTION DATA

Inspector: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Flush valve: Yes No Weather: \_\_\_\_\_  
 Inspection Status:  Inspected  Abandoned  Buried  Cannot Locate  Cannot Open On Map? Yes No  
 NO ACCESS PRIVATE SURCHARGE DEBRIS X-TIME Y-INCIDENTAL Inspection Method: Remote Descend  
 Surface Photo No. \_\_\_\_\_ Plan Photo No. \_\_\_\_\_ Surcharge Evidence: \_\_\_\_\_ ft Groundwater \_\_\_\_\_ ft  
 Ponding: Yes No Pond Area: \_\_\_\_\_ ft by \_\_\_\_\_ ft Debris: \_\_\_\_\_ inches Debris Type: S-Silt G-Grass D-Dirt

#### 5 – POINT DEFECTS

MANHOLE	DEFECT	POSITION*	ROOTS	INFIL	COMMENT	PHOTO

NOTE: Position \* has two components - 1) a range of clock positions using North as 12 O'Clock; and - 2) distances measured in feet to the nearest hundredth of a foot. Measure from lowest point on top inside edge of frame to top and bottom of the defect being measured.

CODE	DEFECT DESCRIPTION	CODE	DEFECT DESCRIPTION	CODE	DEFECT DESCRIPTION
B	Broken Manhole	EH	Encrustation Heavy	OH	Obstruction
BR	Broken Ring	EL	Encrustation Light	OEL	Open Joint, Large
BC	MH Cover Crack or Broken	EM	Encrustation Medium	OJM	Open Joint, Medium
BF	MH Frame Crack or Broken	ESH	Scale Heavy	RF	Fine Roots
		ESL	Scale Light	RM	Mass Roots
		ESM	Scale Medium	RT	Tap Root
CBX	Catch Basin	FC	Fracture Circumferential	SC	Sewer Shape Changes
CC	Crack Circumferential	FL	Fracture Longitudinal	SOL	Surf Damage, Corrosion Large
CNI	Connection Intruding	FM	Fracture Multiple	SOM	Surf Damage, Corrosion Medium
CL	Crack Longitudinal	H	Hole	SS	Surf Damage, Spalling
CM	Crack Multiple	HA	MH Above Grade	SW	Surface Damage, Wear
CX	Connection Defective	LB	MH Below Grade	V	Vermite - Lata
CXI	Connection Defective/Intrude	JDL	Joint Displacement Large	XM	MH Collapsed
D	Deformed (Non-Brick)	JDM	Joint Displacement Medium	Z	Multiple, See Comment
DB	Deformed (Brick)				
DE	Debris	MI	Brick Missing		
DEG	Debris, Grease	MM	Missing Mortar, Medium		
DES	Debris, silt	MS	Missing Mortar, Surface		
DH	Deformation Horizontal	MT	Missing Mortar, Total		

**Condition Grade (ICG):**  
 1- No Defects  
 2- Circumferential Cracks  
 3- Multiple Cracks  
 4- Multiple Fractures  
 5- Collapse/Severe Breaks

**Infiltration:**  
 IS - Seep  
 ID - Dripper  
 IR - Runner  
 IG - Gusher  
 N - None

**Roots:**  
 RF - Fine  
 RM - Mass  
 RT - Tap

#### 6 – REHABILITATION INFORMATION

Manhole Accessibility To Cover – Good/Poor \_\_\_\_\_ From Cover to Pipe – Good/Poor \_\_\_\_\_

Space for Rehabilitation and Staging \_\_\_\_\_

- 1.) Choose those applicable Intersection/Street Number of lanes \_\_\_\_\_ 1-Way/2-Way Median/Shoulder/Sidewalk Commercial/Residential
- 2.) Description of Surrounding Area \_\_\_\_\_
- 3.) Area Available for Equipment Setup \_\_\_\_\_
- 4.) Overhead Obstruction \_\_\_\_\_
- 5.) Other \_\_\_\_\_

Manhole Condition Assessment \_\_\_\_\_ PointGISID \_\_\_\_\_