

Citizens Wastewater CCTV inspection requirements specifications

This document contains requirement specifications for CCTV inspection format and deliverables provided to Citizens Energy Group (Citizens).

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1. Project Folder Submission Requirements:

- a. A folder is required for each set of inspections, otherwise called "Inspection Type"
- b. The 'Inspection Type' corresponds with the '**Purpose**' of inspection noted in **Section 5** of this document.
 - '**Inspection Type**':
 - **Initial** – This video is part of the initial cleaning and televising of the sewer to note the conditional assessment and defects ahead of ordering the liner.
 - **PreLiner** – This video is taken immediately prior to the liner being installed to confirm lateral lengths and perform final cleaning.
 - **PostLiner** – This video is taken immediately after the liner is installed and laterals are reinstated. Defects in the liner and lateral locations are noted.
- c. Folder naming requirements:
 - Format: **Citizens-assigned Project Number_Inspection Type**
 - Example Folder Name: **92RR02613_PostLiner**
- d. The folder must include the files identified in **Section 2** of this document.
- e. The inspections must follow the guidelines set forth in **Section 4** of this document.
- f. The database must pass **PACP (version 6.0)** data validation to be accepted, as noted in **Section 6** of this document.
- g. All the deliverables mentioned in this section, combined together, are what comprises a "**project**".
- h. When multiple CCTV vans are used on the same project:
 - This must be communicated to your CEG Project Manager prior to beginning the project, but also immediately if necessary mid-project.
 - Combining projects from multiple vans into one project for submission is preferred.
 - If combining projects is not possible, with prior approval, we will accept multiple projects (i.e. a single project from each van).
 - The reason for this exception is because combining data from multiple vans into one project submission can at times be problematic.

2. File Requirements for Submission

- a. Files and File Format per submission:
 - A SINGLE ‘PACP 6.0 exchange database’ - .mdb file format
 - *DO NOT submit a database for each inspection. A single database should be submitted containing the data for the entire project.*
 - See **Sections 3-6** for further information on database format and specifications.
 - A video for each inspection - .wmv, .mpg, or .mp4 (with the H.264 codec) file formats
 - The following video file formats/codecs will not be accepted: .avi, .divx, H.263 codec
 - A photo for each observation - .jpg file format
 - A Pipe Log for each inspection – .pdf file format
- b. The database cannot be password protected.
- c. The CCTV software/vendor should be able to accommodate these requirements. Contact the software vendor if there are any issues.

3. Database Format:

- a. Citizens requires the ‘**PACP 6.0 exchange database**’ which can be exported from all PACP-certified CCTV software using the software’s PACP project/database export tool/utility.
- b. Alternatively, Citizens uses ITpipes software, and *with prior approval*, can accept the ITpipes database (avoiding the PACP export). A Citizens-specific ITpipes template will be provided in this case. *Notify us if you are using ITpipes software for further instructions.*

4. Inspection Requirements:

- a. Inspections must be coded using the PACP 6.0 coding format.
 - Refer to the NASSCO PACP 6.0 manual for inspecting guidelines.
- b. Inspections must be named with Citizens’ Upstream and Downstream Node IDs (typically manholes).
- c. The Citizens IDs are sometimes non-manhole “nodes”, such as blind Ts, but still must be used as the “manhole ID” to begin/end an inspection. Using our maps and distances between nodes can help identify if it is not obvious.
- d. See **Section 5** for further specifics on individual database fields.

5. Database 'Header' Fields – Mandatory Fields:

- See **Appendix A** of this document, which is the PACP Header Form directly out of the PACP 6.0 manual.
- Citizens requires the standard PACP-required fields (**red text** on Appendix A), along with additional fields (highlighted in **YELLOW** on Appendix A).
- **Clarification on some specific Header Fields:**
 - a. **'Upstream_MH'**: (Field 12) Citizens upstream Node ID
 - b. **'Downstream_MH'**: (Field 16) Citizens downstream Node ID
 - c. **'Material'**: (Field 26) Please list the host pipe material as accurately as possible. If ZZZ is chosen give details in the Additional Info field.
 - d. **'Lining Method'**: (Field 27) Select the appropriate lining material for the segment. If ZZZ is chosen give details in the Additional Info field.
 - e. **'Total Length'**: (Field 29) Put the distance from manhole wall to manhole wall in this field.
 - f. **'Purpose'**: (Field 34):
 - **'Pre-Rehabilitation Survey' (D)** selected for **Initial** inspections
 - **'Pre-Rehabilitation Survey' (D)** selected for **PreLiner** inspections
 - **'Post-Rehabilitation Survey' (C)** selected for **PostLiner** inspections
 - **'Re-Survey' (H)** selected for any re-surveys
 - g. **'W/O' (Work Order)** (Field 40): Citizens-assigned Project Number

6. Database Validation:

- a. The PACP 6.0 database received will be imported according to PACP 6.0 definitions and must pass PACP 6.0 error validation.
- b. The database fields must match Citizens field requirements as indicated in **Section 5**.
- c. In the PACP database, Media_Inspections table:
 - Each video file provided needs to have a record in the **Media_Inspections** table.
 - The **Video_Name** field must contain the name(s) of the video file(s).
 - The **Video_Location** field must contain the file path relative to the database.
 - For example, if the video(s) are located in the same folder as the database, this field would only have a backslash (\).
- d. In the PACP database, Media_Conditions table:
 - Each picture file provided needs to have a record in the **Media_Conditions** table.
 - The **Image_Reference** field must contain the name(s) of the picture file(s).
 - The **Image_Path** field must contain the file path relative to the database.
 - For example, if the picture(s) are located in the same folder as the database, this field would only have a backslash (\).
- e. Databases received that do not meet these specifications and/or return errors upon import, will be required to be fixed by the Contractor and re-submitted **within a one-week timeframe**.

7. Pipe Log Forms

- In an effort to standardize information in the Pipe Logs submitted by our contractors, the additional Citizens-required header fields may need to be added to the contractor's template file. As listed in **Section 5**, some fields that are listed as optional on the PACP Header Form are now required by Citizens.
- Reference **Appendix A** for an example of a report containing both PACP-required and CEG-required fields
- In addition to PACP-required fields, the following fields must be listed on the Pipe Log:
 - a. Field 26 'Material'
 - b. Field 27 'Lining Method' is now required.
 - c. Field 29 'Total Length' is now required.
 - d. Field 34 'Purpose' is now required
 - e. Field 39 "Additional Information" This field must be used any time 'ZZZ' is used in another field.
 - f. Field 40 'W/O'# is now required
- An observations graphic showing upstream and downstream manholes and lateral positioning is required on the Pipe Log form.

8. Other Terms

- a. The Contractor's internet infrastructure should have a minimum upload capability of 15MB/second. Anything less can result in very long upload times and opportunities for error due to the size of video files. Uploading using a cellular connection such as a hotspot or air card is not recommended.
- b. Citizens reserves the right to change or add specifications at any time, including but not limited to the NASSCO PACP version for inspection coding and database deliverable.



Default required fields are in **red text**.
 Additional Citizens required fields are **highlighted in yellow**.



PACP HEADER FORM

Surveyed By (1)	Certificate No. (1a)	Owner (2)	Customer (3)	Drainage Area (4)	Sheet No. (5)
P/O No. (6)	PSR (7)		Date (8) YYYYMMDD	Time (9)	
Street (10)		City (10a)		Upstream MH No. (12)	
Location Details (11)					
USMH Rim to Invert (13)		USMH Grade to Invert (14)		USMH Rim to Grade (15)	
DSMH Rim to Invert (17)		DSMH Grade to Invert (18)		DSMH Rim to Grade (19)	
Sewer Use (20)	Direction (21)	Flow Control (22)	Height (23)	Width (24)	Shape (25)
Material (26)	Lining Method (27)	Pipe Joint Length (28)	Total Length (29)	Length Surveyed (30)	
Year Laid (31)	Year Renewed (32)	Media Label (33)	Purpose (34)	Sewer Cat (35)	
Pre-Cleaning (36)	Date Cleaned (36a) YYYYMMDD	W/O # (40)	Weather (37)	Location (38)	Pressure V (42)
Project (41)			Additional Info (39)		

Sketch



CCTV Inspection Form

Distance (feet) (meters)	Video Ref	Code		Continuous Defect	Value			Joint	Circumferential Location		Remarks	
		Group/ Descriptor	Modifier/ Severity		S/M/L	Inches			%	At/From		To
						1st	2nd					