

Digital Work Management Through Web Based GIS

Creating Efficiencies in Water & Sewer System Operations

PA-AWWA

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Case Study Summary

Effective operations and maintenance of water and sewer pipelines are integral to sustaining system reliability to customers. Using GIS in a web-based platform, Lower Paxton Township Authority (LPTA) has integrated a web-based GIS to organize the volumes of information captured over time.

In addition to system mapping, the GIS provides a digital library of documents based on location. Record drawings, lateral diagrams, easement contracts, and building inspections are a sampling of the documents organized by the GIS.

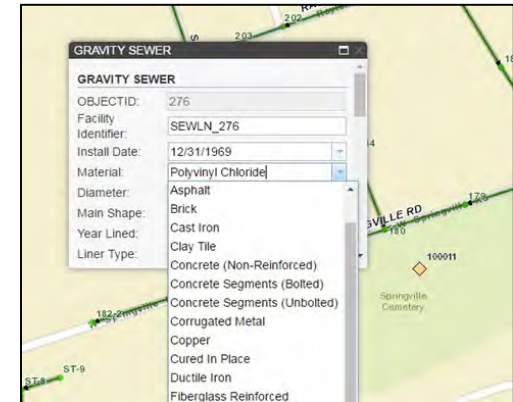
This presentation will present LPTA's experience in building and utilizing a web-GIS solution and review how the positive feedback by staff has expanded the scope of the GIS's capabilities to efficiently manage additional assets.



ESRI Local Government Information Model (LGIM)

Standardized database model that helps local governments leverage their geographic information to improve GIS activities and enhance user services

- ESRI industry-wide design standard
- Enables and enforces data entry rules using standard fields and domains
- Facilitates data sharing between public entities
- Database Model Structures available:
 - Sanitary Sewer
 - Storm Water
 - Water Distribution
 - Electric
 - Gas
 - Land Records



DISCHARGE_POINT							
FACILITYID	TYPE	STRUCTURE CONDITION	FLOW CONDITION	FLOW DIRECTION	NOTES	OUTFALL	
YB0146	ENDWALL	EXCELLENT	OPEN	W	274' 18" CPP	YES	
YB0145	OTHER	GOOD	1/4 BLOCKED	NE	60' 15" CMP	YES	
YB0144	FLARED END SECTION	EXCELLENT	OPEN	W	291' 24inch pipe	YES	
YB0143	FLARED END SECTION	GOOD	<Null>	W	254' 15" CMP	YES	
YB0142	FLARED END SECTION	GOOD	OPEN	SW	213' 18" CMP	YES	
YB0141	ENDWALL	GOOD	1/4 BLOCKED	W	280' 24" CMP	YES	
YB0140	ENDWALL	GOOD	1/2 BLOCKED	E	113' 24" CMP	YES	
YB0139	FLARED END SECTION	GOOD	3/4 BLOCKED	NW	319' 24" CMP	YES	
YB0138	FLARED END SECTION	GOOD	FULLY BLOCKED	W	282' 15" CMP	YES	
YB0137	FLARED END SECTIC	GOOD	UNDETERMINED	SW	262' 15" CMP	YES	
YB0136	<Null>	GOOD	OPEN	S	188' 15" CMP	YES	
YB0135	ENDWALL	GOOD	OPEN	S	185' 18" CMP	YES	
YB0134	FLARED END SECTION	GOOD	OPEN	S	185' 15" CMP	YES	
YB0133	DITCH ONLY	GOOD	FULLY BLOCKED	S	194' 15" CPP	YES	
YB0132	UNDETERMINED	GOOD	OPEN	NW	300' 96" OTHER	YES	
YB0131	OTHER	GOOD	OPEN	W	268' 18" RCP	YES	
YB0130	ENDWALL	GOOD	OPEN	W	253' 18" CMP	YES	

Standard LGIM Layers

Sanitary Sewer

- Manholes
- Gravity Pipe
- Force Mains
- ...

Water

- Pipes
- Valves
- Hydrants
- Storage
- ...

Base Layers

- Parcels
- Streets
- Waterways
- Flood
- Imagery
- ...

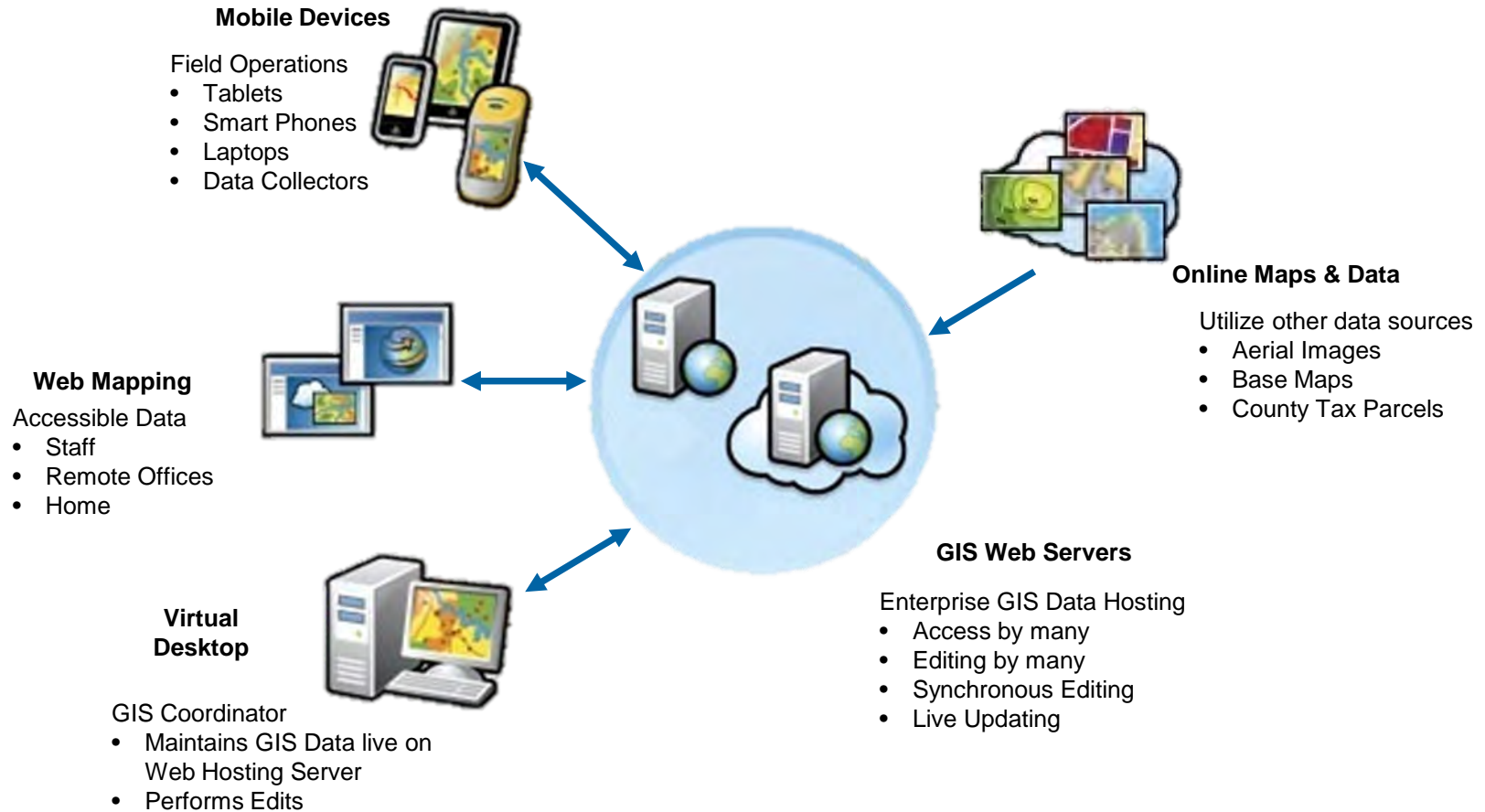
Storm Sewer

- Outfalls
- Inlets
- Pipe
- Detention Basins
- ...

Gas

- Pressure Lines
- Regulators
- Service Connections
- ...

Use of Cloud Hosting



Benefits of Web Mapping

Leverages Existing GIS

- Captures effort already completed in GIS development
- Expands GIS use and capabilities

Manages Data and Users

- Controls user permissions for viewing and editing data
- ESRI is industry standard for GIS data

Centralized Cloud Database

- Real-time data, live updates, everyone is using current version
- Standardizes data entry

Custom Web Interface

- Accessible anywhere with internet service (office, field, home, etc.)
- Accessible across various devices (desktop, mobile, data collectors, etc.)
- Scalable and customizable



GHD Asset Management Basemaps Map Layers GRAVITY SEWER

Attachments

Upload New Attachment:
Choose File No file chosen

View Existing Attachment(s):

- BC-6ABC REPLACEMENT RECORD DRAWINGS PP2.pdf
- 393-394.pdf

25307

Project: BC-6 Length: 190.5 LF
 Street: Lancer Street Pipe Size: 8" Type: SDR 35
 Contractor: Doll Construction Co. Grade: 1.50% Max Depth: 10'-12"
 Engineer: GHD Air Test: 5 PSI 5 Min.
 MH #: 393 - 394 Date Completed: 12/17/2013

House/Lot No.	Depth at C/O	Lateral Length	Station of "T"	MH	INVERT Elev. of "T"	Station of "T"	Lateral Length	Depth at C/O	House/Lot No.
				MH 394	457.80				
						10'-12" (-21.0')			
						8'-10" (-18.9')			
				STA 0+00					
				MH 393					

Numbers in red indicate the depth of the main

1 Results

Zoom	Buffer	Report	Attachment	Edit Attributes	Edit Geometry	Create Work Order	Facility Identifier	Install Date	Material	Diameter	Downstream Elevation	Upstream Elevation	Slope	Rec Dwg Length	Year Lined	Liner Type	From Manhole	To Manhole	Contract	Name	Function
Zoom	Buffer	Create Report	Attachment	Edit Attributes	Edit Geometry	Create Work Order	BC6A_394_BC6A_393	Dec 31, 2013	PVC	8	455	456.76998901	0.93000001				BC6A_394	BC6A_393	BC6A 6B 6C REPLACEMENT	INTERCEPTOR	



[Icons] + Selection Tools AUTH PARCEL POINT [Icon]

- SANITARY SEWER SYSTEM
- AUTH PARCEL POINT
- SEWER MANHOLE
- SEWER MANHOLE LABELS
- SEWER NETWORK STRUCTURES
 - FLOW METER
 - PUMP STATION
 - TREATMENT PLANT
- GRAVITY SEWER
- SEWER PRESSURIZED MAIN
 - FORCE MAIN
 - LOW PRESSURE
- CLEAN OUT
- LATERALS
- MINIBASINS
- STORM WATER
 - STORM OUTFALL
 - STORM INLET
 - CATCH BASIN



1 Results [Icons]

Zoom	Buffer	Report	Attachment	Edit Attributes	Edit Geometry	Create Work Order	OBJECTID_1	PARCELID	SITEADDRESS	PRPRYDSCR	OWNERNAME1	OWNERNAME2	PSTLADDRESS	PSTLCITY	PSTLSTATE	PSTLZIP5
Zoom	Buffer	Create Report	Attachment	Edit Attributes	Edit Geometry	Create Work Order	5931	35-059-116	4512 MARBLEHEAD ST	4512	ADAMS, JOHN D		4512 MARBLEHEAD ST	HARRISBURG	PA	17109





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