

Building the World's Hub for Utility Infrastructure Construction



DCM Solution Overview

Locusview Solution Overview for Utilities

Introduction

Utilities leverage paper, point solutions and traditional work processes to execute complex long-cycle construction work and manage their capital investments. In the past, utility leaders have viewed the planning, execution and close-out phases of long-cycle construction as siloed. This mindset has hindered utilities from delivering projects on time and on budget, and future challenges of operating, maintaining, and innovating based on poor as-built data.

This status quo considerably impacts stakeholders across the utility construction value chain. Executives rely on inconsistent data for forecasting, damaging their credibility with regulators and investors. Finance struggles with performing accurate reconciliation and capitalizing assets on time. Operations and GIS groups cope with untimely and incomplete field data, hindering their ability to make proactive decisions and damaging System of Record integrity. Field crews must navigate multiple methods of data collection, including paper. Contractors endure delays and inaccuracies in payments, and customers suffer from longer outages and site disruptions.

These inefficiencies prove unsustainable in light of growing regulatory, safety, financial and environmental pressures which pose further challenges on operating, maintaining, and innovating the network. Now more than ever, utilities need a holistic solution to do more with less to promote capex efficiency. This is why Locusview is pioneering the concept of Digital Construction Management (DCM).

What is DCM?

DCM is a digital platform, purpose-built for long-cycle construction and used by all project stakeholders to manage the construction process from planning to close-out. DCM represents a paradigm shift that leverages real-time data to transform manual processes into fully digital and automated workflows, uniting multiple data sources into a single source of truth, promoting operational excellence and ensuring full transparency and improved business decision making.

Since its inception, Locusview has been privileged to work hand-in-hand with tier-1 utilities to understand and address business pains identified across the industry. Our approach marries best practices and lessons learned with highly-configurable modules to provide personalized solutions for customer-specific workflows and business rules. Locusview's focus on ease-of-use and "Field User First" mentality has been pivotal in our ability to orchestrate large-scale deployments and change management.

Locusview in Numbers

+30
Tier-1
Utilities

+180
Contractors

+5000
Field Crews

+161K
Projects
Digitized

\$45M
'22/'23 Product
Investment

\$12B
Capital
Projects

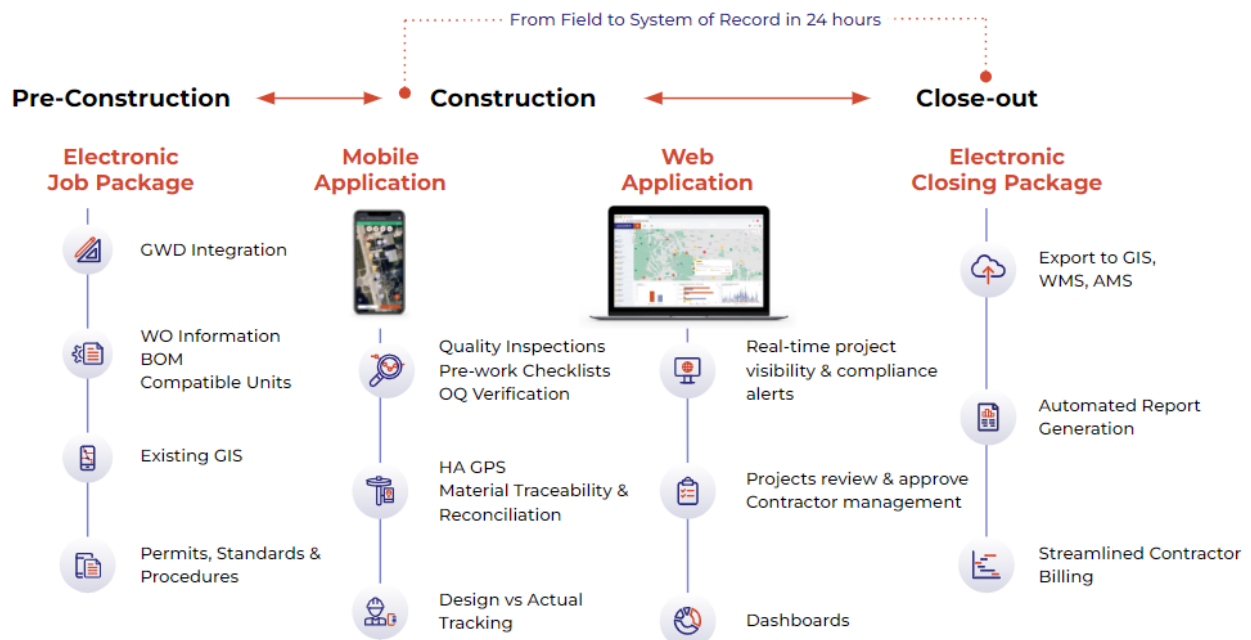
LOCUSVIEWBUILD - Overview

Our core product, **'LocusviewBuild'**, helps utilities overcome operational management challenges with a built-for-purpose cloud solution to scale network expansion and modernization construction programs. Leveraging role-based workflows and a "Field User First" mentality, LocusviewBuild fills the gap between planning and closeout for a complete end-to-end digital thread. Unlocking the potential of high-fidelity construction data helps ensure a robust system of record to support accurate network digital twin, and hydrogen-ready networks to meet increasing decarbonization goals.

Some highlights of LocusviewBuild include:

- ✓ Automated job package handoff to the field by integrating with budget, GIS, design, engineering, work and asset management systems
- ✓ Automating material traceability data collection
- ✓ Survey-level digital as-builts with minimal training
- ✓ Automated validation against design & Compatible Units information
- ✓ Real-time validations for compliance, workmanship quality and operator qualification
- ✓ Automated material and labor reconciliation
- ✓ Real-time reporting
- ✓ Automated export of approved work order data to systems of record

LOCUSVIEWBUILD Workflow - Art of the Possible



During **Planning**, the Locusview platform integrates with budget, GIS, design, engineering, work and asset management systems to create a single **Digital Job Package** that is assigned to utility or contractor crews directly on the Locusview Mobile application. This Digital Job Packet typically includes the design, work order, bill of materials, permits, existing infrastructure, and company standards.

During **Construction**, field users begin their work with detailed, organized information *right from the start*. Role-specific workflows can be accessed via **the LocusviewBuild Mobile Application**, which is integrated with high-accuracy GPS receivers and barcode scanners. **Foreman** are able to check in their crew and document field changes from the provided work plan. Crews are able to view the design directly in the mobile application and quickly document any anticipated changes before construction begins. This allows for back office roles to quickly see documented changes and expedite any needed approvals. They capture the HA GPS digital as-builts stand-alone or by digitally documenting changes to the design and CU's, and provide job closing documentation while Locusview automatically reconciles materials consumed.

Inspectors receive their jobs and are able to complete Quality Inspections quickly and easily with smart forms and the ability to directly associate their inspections with as-built information collected by each of their contractors, while on-site and through remote inspections.

Simultaneously, back-office **Supervisors and Managers** use **LocusviewBuild's Web Application** to gain real-time field visibility. This enables real-time project progress monitoring, access to automated alerts/warnings/validations, and contractor oversight, ensuring compliance with safety and regulatory requirements, as well as enhanced operational awareness.

During **Close-Out**, an automatic financial reconciliation is performed, and digital as-builts, daily forms, and other configurable reports are automatically generated. These are used to validate and verify the information submitted by the field crew for review and approval in one single Digital Job Package. Once approved, data is seamlessly incorporated into the system of record with minimal human involvement, resulting in elimination of backlogs and ensured archive integrity.

Benefits

Contractor/ Crew Management	Data and work practice standardization
	Automatic validation of completeness and accuracy of as-built and construction activity data
	Real-time visibility into project progress, field requests and iterations
	Scoring system for contractor performance
Financial Management	High-fidelity data enables better-informed operational decision-making and investment planning for network enhancements
	Enhanced defensibility and streamlined regulatory and financial reporting; steady investor and regulator confidence
	Improved rate case success and accurate tax incidence
Future Proofing	System of Record as Single Source of Truth - No inconsistencies, uniting all stakeholders
	Improved archive integrity and enhanced digital twin initiatives
	Attract next generation of workforce with advanced technologies

Values

Improved Efficiency	70% reduction in project cycle-time by removing bottlenecks and duplicative data entry; save time on...		
	1. Work order preparation and distribution	2. Asset and location data collection	3. Design change approvals and downtime
	4. On-site Inspections	5. Reporting, as-building and project submittal	6. Field<>Backoffice iterations ("kick-backs")
	7. QA/QC of activity forms and as-built data	8. SOR updates	9. Asset capitalization
	90% faster financial/material reconciliation		
	Existing teams of PMs and supervisors can manage more field crews than before		
Cost Reduction	20% reduction in data collection costs with savings on outsourced surveyors and minimizing travel costs for corrections and onsite inspections		
	Reduce overspends due to lack of job-site transparency (material and labor)		
	Realize more contractor "fast-payment" discounts		
	Reduce rework costs (direct and indirect)		
Risk Reduction	Reduce CWIP/AFUDC costs		
	Improved emergency response with GIS updated in near real-time and accessible in the field		
	Enable the implementation of a robust PSMS as per API-RP 1173, including Management of Change (MOC) workflows		
	Improved risk management and operational awareness		
	Ensure regulatory compliance and workmanship quality in real-time		
Reduction in accidental strikes / dig-ins			

LOCUSVIEWBUILD - Packages

The proposed solution will contain the following LocusviewBuild product package(s).

Construct and Close

Construct and Close is the most comprehensive LocusviewBuild Package that fully manages construction from planning to closeout. This package allows a fully digital work handoff to the field, including work orders complete with design information. Field crews are able to capture a highly accurate digital as-built record along with all other needed construction data to complete the closeout. In the back office, automated reconciliation speeds time to close allowing reviewers to quickly review and expedite updates to System of Record including GIS, Asset Management, Work Management, and Document Management.

As-Building

The As-Building package automates the process of updating GIS with critical construction data. The package covers automated Work Order distribution to field crews, optimized workflows for capturing a highly accurate digital as-built of constructed assets, reviewing work in the back office, and updating GIS systems on approval.

Tracking and Traceability (Gas) / Inventory Management (Electric)

The Tracking and Traceability (T&T) package provides gas utilities, a product that covers all traceability needs and is easy to implement. Without needing extensive hardware like GPS receivers, utilities can meet all compliance needs¹ to *know their system* while achieving additional benefits from operational efficiencies from removing paper based workflows. The T&T package allows for an easy transition to As-Built or Construct and Close.

Quality Inspections

The Quality Inspections package is a standalone package that provides everything a utility needs to digitally capture all the required information for their construction based quality inspections programs. With industry best practice templates, configurable reporting, and robust configurable forms, utilities can digitize their inspections program with little effort and cost.

Integrated Inspections

The Integrated Inspections package is an optional add-on to your construction based LocusviewBuild package and allows for all of the functionality in the Quality Inspections package, plus more. With the added abilities to work within actual construction work orders, inspectors can document their findings and associate them to actual tasks, assets, and personnel. Further, inspectors have the ability to better understand what work is active, what type of work it is, and what crews will be working on that work so that they can better prioritize and audit construction according to an inspection program's priorities.

¹ Examples include: (1) PHMSA Mega Rule (2) API 5L (3) API RP-1173 (4) IMRRP - British Iron Main Risk Reduction Programme; (5) NUAR – British National Underground Asset Registry; (6) BRO – Dutch Basisregistratie Ondergrond; and (7) Singapore Land Authority's (SLA) Standard and Specifications for Utility Survey specifying the data that should be captured for new underground utilities

LOCUSVIEWBUILD Product - Features

Feature (Bold requires Integration.)	Quality Inspections	Integrated Inspections	Tracking & Traceability	As-Building	Construct and Close
Quality Inspections Reports	✓	✓			
Work Order Review and Approval	✓	✓	✓	✓	✓
Offline Mobile Data Collection	✓	✓	✓	✓	✓
OQ Verification	✓	✓	✓	✓	✓
OS Support for Android, iOS, Windows	✓	✓	✓	✓	✓
Dashboards	✓	✓	✓	✓	✓
Dynamic Forms	✓	✓	✓	✓	✓
Real-time Alerts	✓	✓	✓	✓	✓
Plastic Pipe Barcode Support			✓	✓	✓
Steel Pipe Custom Barcode Support			✓	✓	✓
Flexible Barcode Support for All Assets			✓	✓	✓
Guided Mapping Workflows			✓	✓	✓
Joint Traceability			✓	✓	✓
Pressure Test Traceability			✓	✓	✓
Digital As-Built Updates to GIS			✓	✓	✓
As-Built Reports				✓	✓
Dimensioning				✓	✓
Existing GIS Network Viewing				✓	✓
High Accuracy GPS Capture				✓	✓
Trenchless Mapping Workflow				✓	✓
Work Order Creation and Assignment				✓	✓
Compatible Units					✓
Field Available Graphic Work Design					✓
Redlining					✓
Material Reconciliation					✓
Bill of Material Creation and Validation					✓
Notifications					✓
Workflow Builder					✓

Technical solution description with further details on features and functionalities will be provided upon request.

Turnkey Lease Solution

LocusviewBuild is deployed to external contractors and internal crews leveraging a unique Turnkey Lease package with a “one throat to choke” approach. We help our customers avoid the overhead burden of managing multiple technology deployments and complex procurement processes while decreasing the total cost of ownership. Locusview’s Turnkey Lease model has the added benefit to capitalize 100% of the solution costs. In addition, Locusview offers modular packages of hardware, software and managed services to meet customer-specific needs. The complete solution includes:

Hardware:

- High Accuracy GPS Receiver (GNSS)
- Ruggedized Barcode Scanner
- Ruggedized Tablet
- Nanuk Case
- Rover (surveyor) Pole
- RTK Base Station
- Accessories



Software licenses included:

- Field Users: access to mobile application
- Hybrid Users: access to mobile + web applications
- Office Users: web access
- Office Viewer: web access for viewing data and reports

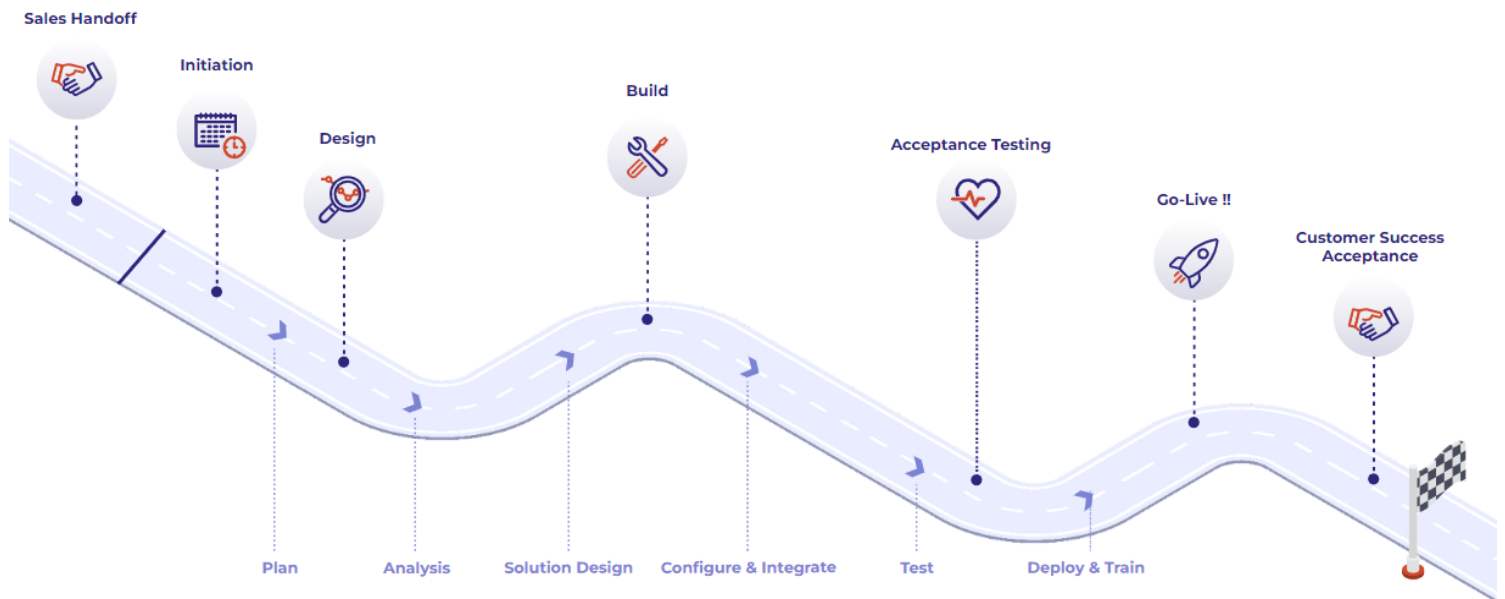
Managed Services included:

- 24-Hour Hardware Repair and Replace
- Mobile Data Plans
- Mobile Device Management
- 24-Hour Support (Help Desk add-on)
- User Management, Onboarding and Offboarding
- RTK Access & Maintenance



Implementation Methodology

- 1. Project Initiation:** Introduce project stakeholders (R&R), review project scope and tasks, introduce pre-requirements documentation, establish Project Charter
- 2. Design:** Identify As-Is / To-Be Process, perform requirements gathering for mobile and web applications to create a Functional Design Document (FDD)
- 3. Build:** Configuration, Integration, QA Test Plan based on FDD for client approval
- 4. Test:** Perform end-to-end User Acceptance Testing (UAT) of the entire system based on plans created during 'Build' stage and predefined test scripts, including hardware, software and workflows
- 5. Deploy & Train:** Hardware delivery and solution training, application usage monitoring
- 6. Customer Acceptance:** Services <-> Customer Success handoff, daily usage monitored against acceptance criteria, Acceptance documentation signed



Our Customers Include

