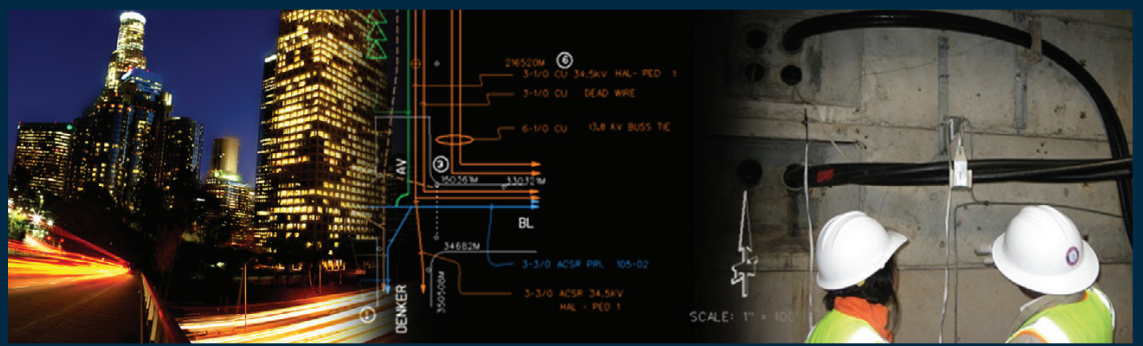


**Bentley**<sup>®</sup>  
Advancing Infrastructure



## Project Summary

### Organization:

Los Angeles Department of Water and Power

### Solution:

Utilities

### Location:

Los Angeles, California, US

### Project Objective:

- increase design productivity by making reference engineering information easier to find.
- reduce design revisions during construction by starting new designs with more accurate data.
- reduce costs to better serve the citizens of Los Angeles.

### Products Used:

ProjectWise<sup>®</sup> Integration Server,  
ProjectWise<sup>®</sup> Geospatial Management,  
ProjectWise<sup>®</sup> Dynamic Plot

## Fast Facts

- LADWP is the largest municipal utility in the United States, serving 4.1 million citizens with 7,238 miles of water mains and 14,486 miles of electric transmission and distribution wires.
- LADWP chose ProjectWise to provide over 200 engineers, designers, drafters, and construction personnel fast and accurate reuse of 300,000 design and construction files.
- ProjectWise has accelerated reference information research on new projects by 80% and has established lasting information integrity by enforcing LADWP CAD and project standards.

## ROI

- ProjectWise saves LADWP an estimated USD 800,000 annually in research time alone.
- Plotting time has been reduced by 40%.
- Data administration costs have been reduced, enabling one fulltime employee to be reallocated to more productive tasks.

# Los Angeles Department of Water and Power Achieves USD 800,000 in Annual Savings with ProjectWise

Engineering Information Management Software Provides Faster Access to More Accurate Design and Construction Documents

## The Pursuit of Efficiency

When the Los Angeles Department of Water and Power (LADWP) surveyed its many stand-alone engineering data repositories, it saw an opportunity to drastically improve its operating efficiency. Eight months later, after implementing ProjectWise<sup>®</sup>, LADWP's engineering information management was transformed, dramatically improving the efficiency of engineers, designers, drafters, and construction crews.

As the largest municipal utility in the United States, LADWP seeks to provide its over 640,000 water customers and 1.4 million electric customers with the best service and lowest cost resources available. Revenue from the LADWP is crucial for funding parks and public safety services for the City of Los Angeles.

## Opportunity Knocks

LADWP saw a huge opportunity when it studied its engineering data management practice. With more than 100 years of records stored in numerous different systems across the enterprise, finding accurate information to start new project designs was extremely time consuming, challenging, and often unsuccessful. Drawing data, foreman's prints, and job addresses were stored in three different Oracle databases. CAD files resided on a Linux server using an in-house configuration management application. Scanned foreman's prints containing field markups were stored in a Windows server, and Office documents, photos, and PDF files were stored in a host of file servers in multiple departments. Compounding this situation were duplicate hard copy drawing archives located in district offices. "Even if you knew where to look, there was no guarantee you would be able to find the data or trust it," said Chad Crouchman, senior civil engineering drafting technician, LADWP. LADWP knew the situation was causing lost productivity, project delays, and increased costs. Significant labor was necessary just to maintain the many repositories and custom software. New projects required hours of research to locate reference files and resolve inconsistencies. Too often, designs were started with incomplete or inaccurate information, which then led to revisions during construction.

## Rising to the Challenge

Intent on improving operating efficiency, LADWP CAD Manager Robert Mendoza led the investigation of a number of solutions including ProjectWise, Bentley's engineering information management and project collaboration software developed explicitly for the design and construction of infrastructure projects. LADWP selected ProjectWise for its ability to store a wide range of file types, provide security, manage drawing version control, support custom workflows, and provide users rapid access to files through spatially enabled search capabilities. ProjectWise replaced LADWP's home grown drawing management system "PDMS," which had been in use since 2003. "Users were reluctant to part with PDMS, but after being exposed to ProjectWise, they quickly saw the advantages in searching for content, reference file management, audit trail, and MicroStation integration," said Mendoza. To begin, Bentley delivered a complete assessment, system configuration, and implementation plan. Training on system administration and customization followed, enabling LADWP staff to automate the cleanup and migration of files, and implement project and CAD standards to ensure lasting information integrity. Bentley support continued through launch with assistance on user manuals and end-user training.

## 80% Reduction in Research Time

The benefits of ProjectWise were immediate. LADWP now had one application and repository for all drawings, maps, photos, documents, and data. This feature alone allowed LADWP to reduce data administration costs and reallocate one full-time employee to more productive tasks. More importantly, new projects experienced an 80% reduction in the time spent researching and validating reference data. With the ProjectWise spatially enabled search interface, users graphically select a region of interest, such as a city block, and quickly discover all relevant information for assets in that area.

With close to 2.5 hours saved on each of the approximately 8,000 projects performed a year, the savings added up quickly. "We are saving approximately USD 800,000 annually in research time alone," said Crouchman.

*“Rather than having to wait months, sometimes years, to get our foreman’s print markups back from the field, we can now get them almost instantly.”*

*– Chad Crouchman,  
Senior Civil Engineering  
Drafting Technician, LADWP*

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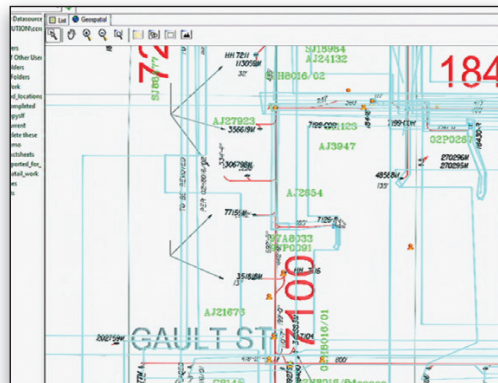
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## More Accurate Information

Using ProjectWise has also helped improve information accuracy for LADWP. Custom workflows ensure the proper LADWP project and CAD standards are used, eliminating several sources of inconsistency and errors. “In the past, employees would improperly seed an underground design with a copy of an overhead drawing, which could result in improper working units and other issues. ProjectWise now ensures the correct seed file is used,” said Crouchman.

ProjectWise Dynamic Plot further aided accuracy with its unique capability to use a special digital pen to capture hard copy construction drawing markups. Once the pen is returned to its docking station, it instantly synchronizes recorded markups with original design files. This ensures as-built accuracy for subsequent projects.

Crouchman notes, “Rather than having to wait months, sometimes years, to get our foreman’s print markups back from the field, we can now get them almost instantly.” He adds, “Field crews just dock the pen and we have those markups for our mapping squads and engineering squads to do their designs. This alone has been a huge benefit of ProjectWise.”



With the ProjectWise spatially enabled search interface, users graphically select a region of interest and quickly discover all relevant drawings, pictures, and documents for assets in that area.

*“We are saving approximately USD 800,000 annually in research time alone.”*

*– Chad Crouchman, Senior Civil Engineering  
Drafting Technician, LADWP*

## The New Normal

With ProjectWise, LADWP has transformed its engineering information management to allow fast and accurate reuse of design and construction files. This benefit provides LADWP increased productivity, lower costs, fewer delays, and improved safety. Moving forward, LADWP intends to increase its already substantial return on investment by expanding its ProjectWise implementation to manage design information for its electricity generation facilities. This practice will bring the total number of managed documents to approximately 800,000 and total LADWP ProjectWise users to roughly 650. According to Crouchman, “Our users really love ProjectWise. It gets them to their data quickly.”



With ProjectWise Dynamic Plot, foreman’s print markups are almost instantly available to LADWP’s mapping and engineering teams.