Mesa Associates, Inc.

Engineers and Consultants

Empowering Engineering Excellence Through Data

The EPI Dashboard Initiative

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Introduction

In the ever-evolving world of utility infrastructure, project visibility and data-driven decision-making have become indispensable. As utilities upgrade and expand their transmission and distribution networks to meet the demands of the energy transition, the complexity of managing project lifecycle workflows, particularly during engineering, has surged.

Recognizing this need, the Engineering Process Improvement (EPI) team at Mesa Associates, Inc. (Mesa) developed a comprehensive digital dashboard to support one of our clients in streamlining project oversight, standardizing tracking mechanisms, and empowering engineering teams with actionable insights.

This paper explores the strategic development, core functionality, and tangible impact of the dashboard, and how this business intelligence tool is transforming how communication engineering projects and resources are managed at the client level.

The Business Problem: Disconnected Data & Engineering Blind Spots

Utility engineering teams often juggle dozens or even hundreds of active projects, each with varying scopes, timelines, stakeholders, and technical requirements. Historically, the challenge was not just in delivering quality work but in monitoring that work effectively.

Prior to the dashboard's implementation, project data was scattered across spreadsheets, email chains, siloed trackers, and static status reports. It was nearly impossible to understand in real time:

1. How many projects were in progress across a given year
2. Which engineers were assigned to which tasks
3. The current engineering status of any single or set of projects
4. How project types and complexity were distributed

These gaps led to inefficiencies in workload distribution, delayed follow-up on critical tasks, and limited visibility for leadership teams making resourcing, financial, or process decisions.

Solution Design: Building the tailored Client-Focused Dashboard

In response to these challenges, the Mesa EPI team developed a Power BI-based dashboard tailored to the unique needs of our client's communications engineering teams. Drawing from project databases, internal trackers, and status reports, the dashboard consolidates data from multiple sources into one interactive, filterable, real-time platform.

Key principles guiding the dashboard design included:

- **Transparency:** A unified view of all communication engineering projects, tasks, and resource assignments
- **Flexibility**: Slicers and filters allow users to drill down by year, status, communication asset type, etc.
- **Accessibility:** Designed for easy use across teams, from engineers to project managers to senior leadership
- **Actionability:** Built-in insights that enable immediate course correction or follow-up when issues are identified

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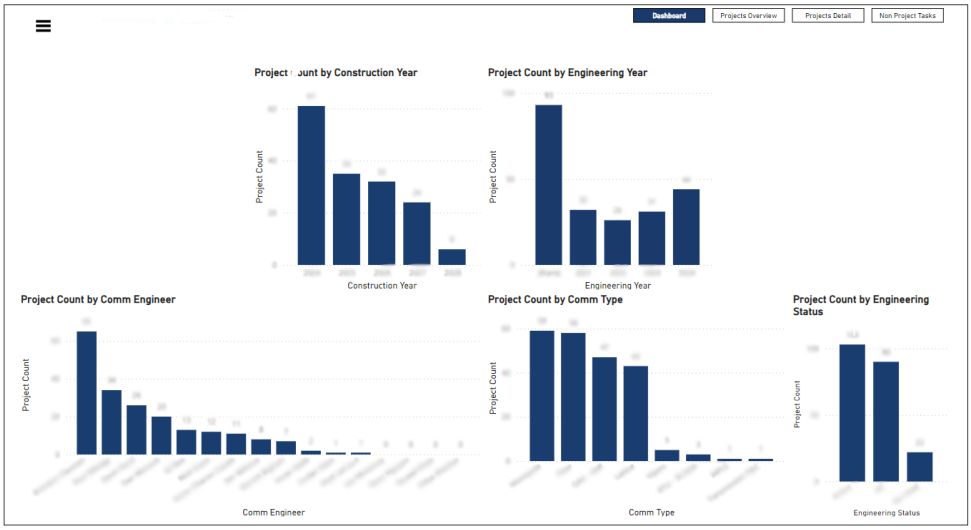
Core Dashboard Features

The dashboard is structured into four primary tabs, each designed with a specific operational purpose for the client's use:

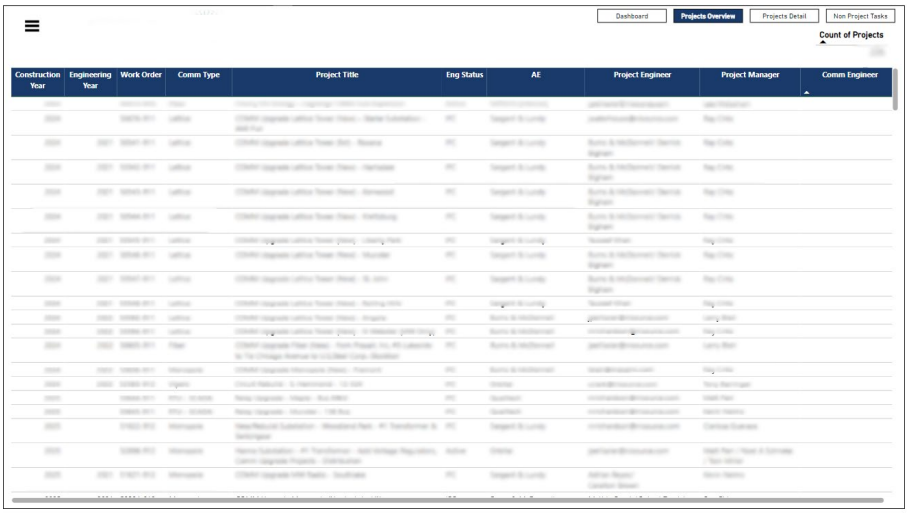
1. Dashboard View

This high-level interface visualizes project counts by construction year, engineering year, communication asset type, engineering status, and assigned communication engineer. Interactive slicers on the left panel enable customized views, empowering users to analyze trends by specific timeframes, engineers, or project characteristics. Bar charts allow rapid comparison of annual activity levels and workload distribution.



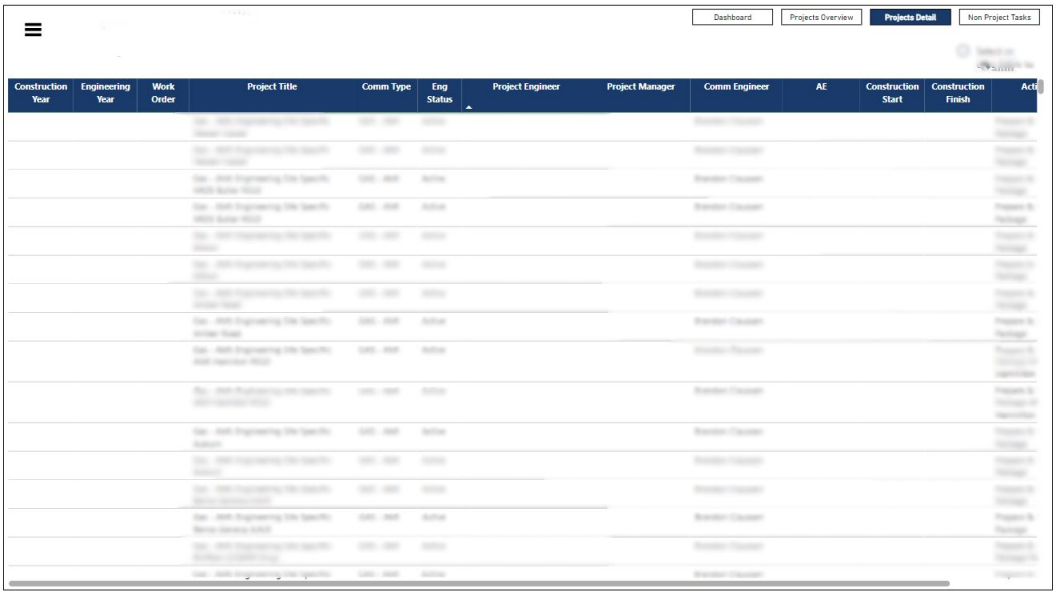
2. Projects Overview Tab

This table view provides detailed listings of projects with sortable columns for construction year, engineering year, communication asset type, engineering status, project title, and responsible personnel. Users can isolate projects by any attribute, such as filtering all projects in the "Active" status for 2023 or identifying which engineers have the highest project load.



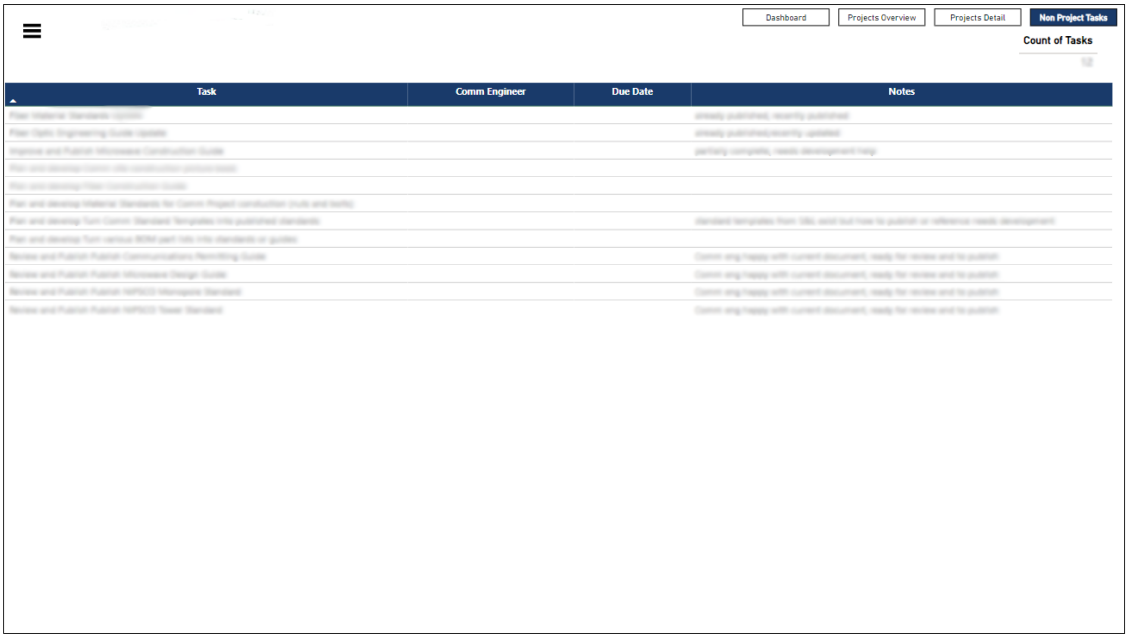
3. Projects Detail Tab

For deeper assessment, this tab surfaces full project records, including construction start and finish dates, project titles, manager assignments, and engineer details. Project managers can use this view to coordinate construction timelines or verify engineering assignments.



4. Non-Project Tasks Tab

Often overlooked in traditional tracking systems, this tab captures documentation efforts and guides development and engineering standards work. It includes task titles, due dates, responsible engineers, and development notes, ensuring non-project work receives adequate support, recognition, and follow-through.



Benefits and Impact

Since deployment, the dashboard has delivered measurable improvements for the client across several fronts:

1. **Enhanced Visibility:** Leadership now has a comprehensive view of all engineering activity across years and project types
2. **Workload Balancing:** Easier identification of overburdened or underutilized engineers
3. **Process Standardization:** Teams reference the same data source for reporting, prioritization, and task execution
4. **Improved Accountability**: Individual engineers and managers can track their active workload and timelines with clarity
5. **Non-Project Task Recognition:** Previously hidden tasks, such as standards documentation, are now visible and valued

A Tool for Today and Tomorrow

The dashboard is not just a reporting tool; it is a decision-making engine. It facilitates smarter project planning, better team collaboration, and more strategic leadership engagement. In an era where utility projects are accelerating in both scale and urgency, having an integrated view of all engineering work is not a luxury. It is a necessity.

The dashboard's modular design means it can evolve with the client's needs. Future enhancements could include expansion to include other engineering disciplines.

Conclusion

As utilities adapt to meet the infrastructure demands of a decarbonized future, engineering operations must keep pace. Through its thoughtful design and strategic utility, the dashboard developed by Mesa's EPI team is already making a significant difference. It enables our clients to deliver engineering excellence while working smarter, faster, and with greater clarity.

With knowledge at their fingertips, client engineering teams are not just responding to project needs. They are anticipating them. And in doing so, they are building the foundation for the next generation of utility engineering support.