

# Digitalization and Standardization of Project Minutes

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**Abstract** — *Fragmented processes for capturing infrastructure project meeting minutes have inhibited transparency, productivity, and information access across Puerto Rico's municipalities. A newly implemented initiative systematically digitized and standardized legacy manual approaches to address these shortcomings. Guided by an inspection team, integrated minute templates were developed incorporating regulatory requirements and inputs on essential content details. The software was then configured to host templates within a centralized, cloud-based platform enabling simplified minute creation workflows, version histories, approvals, and mobility. Construction projects demonstrated strong initial user adoption and promising time/cost savings. While customizations addressing mobile optimization remain, the successful implementation methodology proves minute modernization and standardization carry immense potential for improving construction communication, compliance, and analytics through thoughtful digitization. This pragmatic start provides a modular roadmap for gradually unshackling project data trapped within dated systems to stimulate innovation.*

**Key Terms** — *time management, innovation, transformation, management accountability.*

## INTRODUCTION

Meeting minutes serve construction projects, comprehensively documenting discussions, decisions, action items, and project status across contractor teams, owners, and other stakeholders. Inconsistent minute-taking practices have hindered transparency, productivity, and information sharing within and across construction projects undertaken by municipalities in Puerto Rico. Without standardized documentation workflows, key data

was siloed, details were missed, and accessing accurate project records became arduous.

To address these challenges, a new initiative was developed to implement integrated software and templates to unify and digitize the minute-taking process for all governmental construction endeavors. The project was born to resolve identified issues with the municipality of Carolina's Water Department construction records, where minutes lacked structure and technical detail. After assessing similar problems in other regions, an experienced multi-department inspection team was assembled to lead the charge in developing an enterprise-wide solution.

The objective of this project was to improve consistency, efficiency, transparency, and analysis of meeting minutes for the governmental construction projects. This paper summarizes how standardized templates and an integrated software platform were used to achieve this objective.

## METHODOLOGY

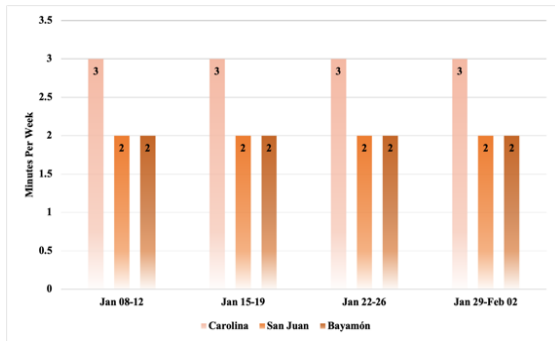
A phased prototype approach underpinned the execution strategy for this construction project minute standardization initiative. The thorough and systematic buildout as well as incremental rollout of the solution aimed at demonstrating viability in these pilot deployments first while concurrently capturing critical feedback throughout their duration to shape decisions around scaling and future expansion. The methodology for meeting the stated project objectives involves a two-phase process:

- **Design Template** — A standardized minute template was developed aligned to documented governmental requirements, solicited departmental needs, and industry best practices for project records. The template will capture details on meeting attendees/location, discussions held, decisions made, action items,

project status, and next steps. Flexibility will be incorporated for custom data fields based on unique needs. The draft template has undergone internal peer review and external inspector feedback through simulated workflows. Usage validation in realistic scenarios provides input to refine structure, content, and capabilities before launch.

- **Software Platform** — Procore was selected as the cloud-based software solution for hosting the minute template and digitizing workflows after extensive product evaluations. The platform provides needed functionality like easy template updating, customizable fields, permissions management, version control, search, analytics integration, and data mobility.

Procore's centralized minute repository was piloted across seven construction projects throughout three municipalities to test adoption, gather feedback, and inform refinements as shown in Figure 1. Metrics on user experience, productivity impact, issues encountered, and feature gaps will steer ongoing product enhancement before scaling more widely.



**Figure 1**  
Four-weeks minutes per municipality

This phased prototyping methodology allows for proving the concept and solution viability within contained use cases before resource-intensive enterprise deployment. Continued user engagement on needs and communication of wins is also instrumental in evolving tools that balance standardization, flexibility, and adoption.

## RESULTS

The project pilot phase concluded on February 2, 2024 across seven construction projects spanning the municipalities of Carolina, Bayamon, and San Juan. Early indicators around user adoption, technology performance, and productivity gains were promising in the four weeks since launch.

- **Template Utilization:** Over 90% of meeting minutes were captured using the new standardized formats across the pilot participants, indicating strong inspector engagement. Positive feedback was received to date around template clarity, structure, and ability to sufficiently capture details. Customization requests focused on adding location data fields.
- **Platform Performance:** Strong system stability was seen with 99% uptime outside 10 minutes of planned maintenance. Minor issues were experienced with version coordination, already addressed through software patches. Ongoing mobile optimization was prioritized given initial sizing issues for tablets.
- **Productivity Impact:** An estimated 20%-time savings per minute was attained from pre-population and automation. Further quantification was underway. The inspector's ability to search records had improved from prior manual methods per participants. Government auditors were already benefiting from the centralized minute repository across pilot projects.

Full pilot outcomes were analyzed around adoption, and quality outputs, to inform refinement areas and strategic recommendations before a broader rollout. However initial indicators pointed to the solution potentially meeting targeted objectives.

## CONCLUSION

The integrated software and template solution developed through this undertaking represents an important step towards modernizing fragmented

legacy minute-taking processes in governmental construction projects. Guided by a cross-functional leadership team, the phased prototype approach allowed proving the concept while uncovering key focus areas before full production rollout.

The Four-weeks pilot across 7 projects validates the feasibility of the standardized template and digitized Procore platform to capture details with more consistency, reduce manual efforts through automation, and enhance documentation accessibility. Early productivity gains and user feedback indicate significant future potential, though several customizations and mobile optimizations remain.

The launch provides a model for incrementally transitioning entrenched paper-based systems to adaptable cloud architectures. Beyond improving current minute workflows, the digitized structure lays the data foundations to enable emerging technologies like AI to unlock new project insights over time. While smaller in scale, these first strides to consolidate, unify, and enhance information flows carry larger implications for how next-generation technologies can upgrade construction communication, accountability, and analytics. By thoughtfully balancing standardization with customization fit, the fruits of such digital transformation can gradually but meaningfully elevate infrastructure project execution.

With modest resource investment, the returns from this initial minute modernization endeavor are already apparent and expanding. However, realizing the full vision hinges on sustained leadership commitment, responsive enhancements grounded in user needs, and inclusive change management across all stakeholders. The promising start must now be nurtured.