

New Jersey Department of Transportation  
Bureau of Research

## Technical Brief



## Streamlining the Project Management Process at NJDOT's Bureau of Research

*The purpose of this research project was to document and analyze the business process of managing research program and individual projects at the Bureau of Research of the New Jersey Department of Transportation. Well documented process provided the bases for identifying potential improvements and streamlining opportunities. The project team also proposed an optimal approach to developing a state-of-the-art management information system that will facilitate this process while improving efficiency and providing for an effective performance monitoring and reporting.*

### Background and Objectives

In order to enhance customer service and strengthen the capacity of the Bureau of Research to ensure the quality of research products, the Bureau initiated a project to rethink and improve the existing data organization, sharing, and processing systems. The ultimate objective of these improvements is to integrate the existing information resources into a centralized project tracking, document bookkeeping, and performance monitoring system. This system will synthesize the Bureau's research project management processes so as to facilitate effective and efficient communication and information sharing among Bureau staff.

### Methodology

The research team conducted a series of interviews with the staff at the Bureau of Research and developed a detailed documentation of the project management process. In order to identify streamlining opportunities the process was broken down in five stages of the research project life cycle, each one comprising of a series of activities as shown in Figure 1.

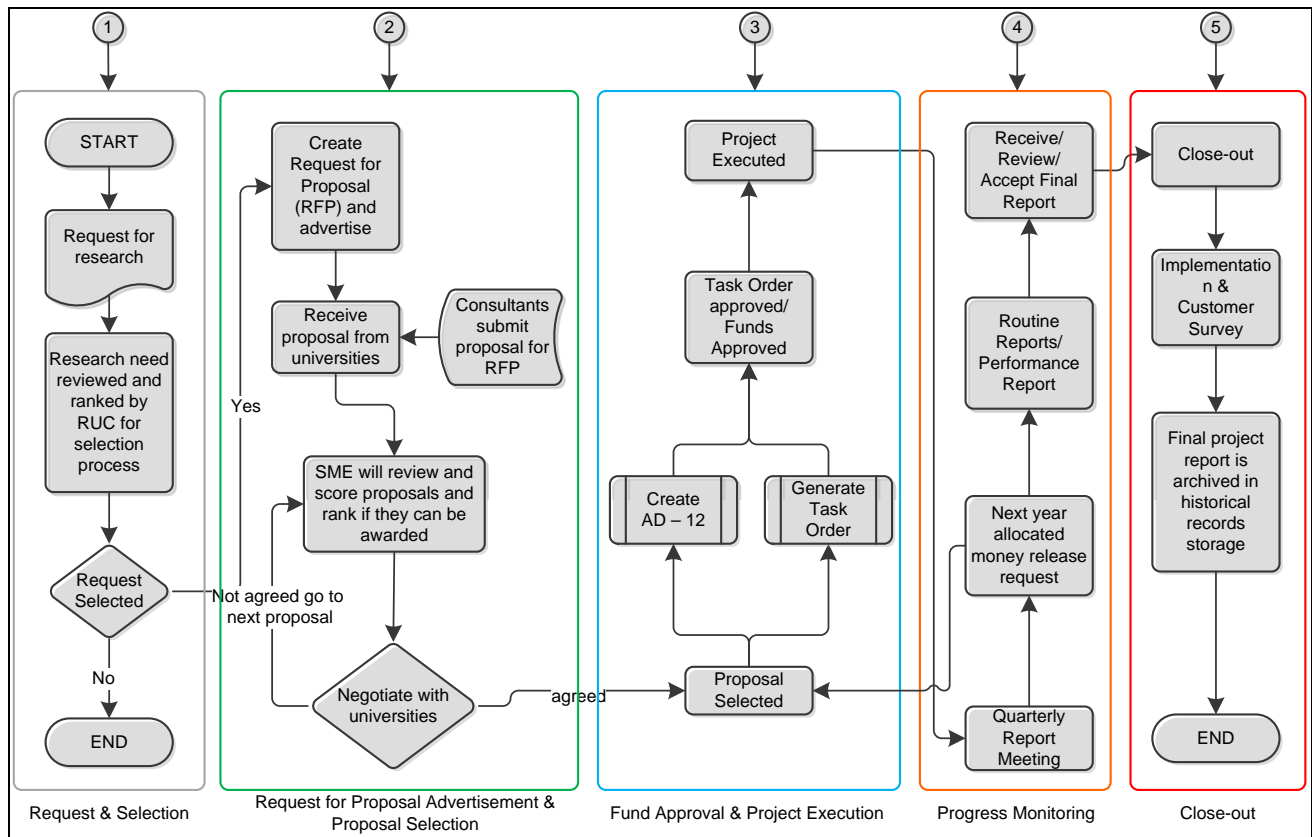


Figure 1: Project management business process at the Bureau of Research

Each activity or a sequence of integral activities was then described in greater detail and illustrated using the process diagrams (Figure 2). In addition, the business process description included information about documents and data created by or exchanged among the participants in the project management process. The instances in which the process could be improved by implementing MIS solutions were identified throughout the business process and noted in the description of the pertinent activities. Some of these solutions include data automation that would reduce the errors and redundancy of project data, thus improving the accuracy of project information and the overall efficiency of the project management process.

Following the completion of the Business Process documentation, the Business Requirements Specifications for the envisioned MIS system were developed as well. This document includes a detail listing of MIS functional and information requirements, based on the documented business process. The Business Requirements Specifications can be used as a bases for development of the envisioned MIS system, per the guidelines provided by the New Jersey Office of Information Technology. Considering the different participants in the research process, their roles and affiliations,

as well as hardware and software compatibility issue as, it was recommended that the MIS system should be implemented as an Internet-based (online) transactional database application. All system users would be able to access this system and exchange information using their internet browsers.

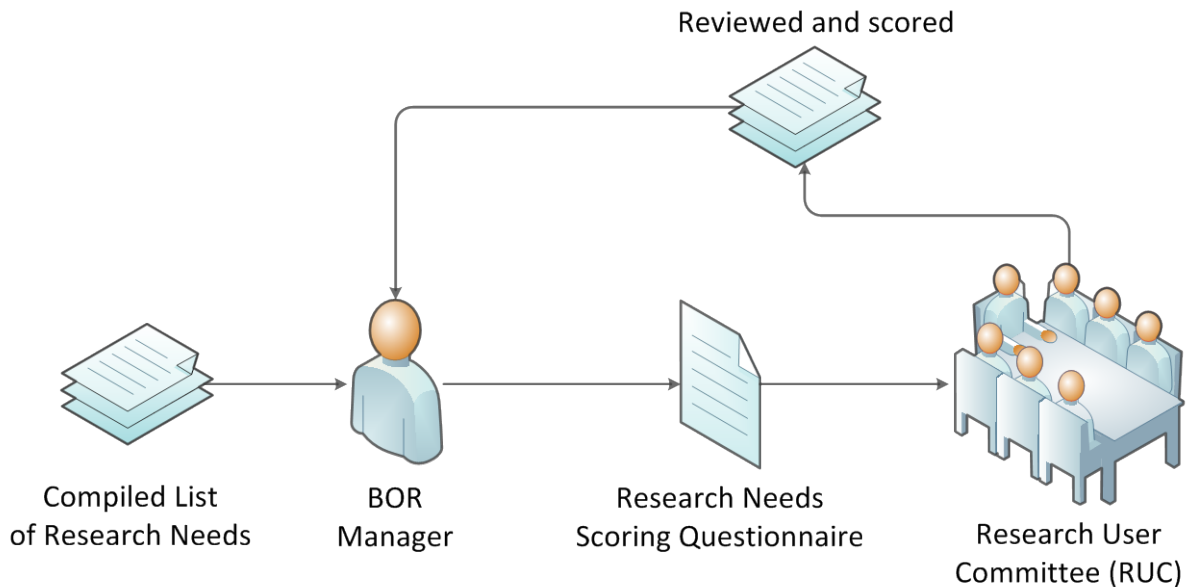


Figure 2: Sample of a Process Diagram: Project Review and Ranking Process

## Project Outcomes

This project completed the first phase of the system development, which consisted of: analyzing the current processes and staff activities within the Bureau of Research and identifying the underlying information flow; identifying the system logic that replicates activities conducted by the Bureau's staff in the research project management process; streamlining the information sharing and reporting functions among different activities; developing a decision support methodology that will use project benchmarks to calculate performance measures; developing reporting requirements according to the needs of the Bureau's staff; developing a methodology to streamline submittal of quarterly reports and requests for time extension and budget modification by participating faculty and researchers, and other NJDOT Research Partners

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A final report is available online at: <http://www.state.nj.us/transportation/refdata/research/>. If you would like a copy of the full report, send an e-mail to: [Research.Bureau@dot.state.nj.us](mailto:Research.Bureau@dot.state.nj.us).

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