**Asset type:** Guardrail

**Process map name:** Guardrail New/Reconstruction

**Identifier:** PM.G.1

**OVERVIEW**

New guardrail and guardrail reconstruction is something that is on nearly every Iowa DOT road and bridge project. Maintaining and updating the proper digital records throughout the entire process helps promote efficiency and stops the recreation of the same information at every data exchange.

**ACTORS**

The process map is focusing on these main actors in the new guardrail/guardrail reconstruction process:

* District Engineers/ Relevant Office
* Office of Design
* Office of Contracts
* Office of Construction Materials/ RCE
* Maintenance Shop
* Contractor

**District Engineers/ Relevant Office**

In this row of the process map, the initiation of a project begins. Through some sort of formal or informal communication, a guardrail need is found. This usually is triggered by either new construction or replacement of existing assets (bridges, culvert, median, pavement, etc.). Then the district engineers or relevant office will try to get survey data for the job if they can. If available, the survey data will be sent to the Office of Design.

**Office of Design**

The Office of Design’s main goal is to take all available data in order to design guardrail that serves its purpose and is able to be built. They will take any survey data available, Google Earth and Roadview images, and as-built plan PDFs from ERMS when designing the guardrail for a project. Once they have collected the necessary data, the design office will use the Standards, Microstation/Geopak, and excel as their main tools in design. After the completion of design, the Office of Design sends their completed design work to the Office of Contracts (ER.G.101). At this point, all MicroStation files and Excel spreadsheets are saved to the ProjectWise server.

**Office of Contracts**

The Office of Contracts receives the plans, usually in PDF (?) and spreadsheet form. Their office then goes through and estimating and bidding phase before letting the information to the contractor, which is released on their website in the same PDF and spreadsheet format.

**Office of Construction Materials/ RCE**

The Office of Construction Materials/ RCE is mainly focused on project progress tracking, so there is a lot of data transfer back and forth between them and the Contractor. Most of these submissions and approvals are done in paper format, whether it be PDF or actual paper. Field records are recorded in PDF form and sent to through Fieldbook into ERMS. Their also may be direct contact with the Office of Design if something needs to be redesigned.

**Contractor**

Most Contractor contact with the Iowa DOT comes through their website, when they are retrieving plan PDFs and spreadsheets, or when working with the Office of Construction Materials on a job. All contact at this point is in non-intelligent formats (PDF, paper, spreadsheet).

**Maintenance Shop**

There is currently no direct communication with the maintenance shop in new and reconstruction of guardrail. When maintenance is needed, PM.G.2 has information regarding data flow.

**Databases:**

The following is the databases used to archive data created through the entire workflow of new guardrail:

* ERMS database
* ProjectWise

**Software applications and data format**

* Google Earth
* Roadview
* Microstation
* Geopak
* Excel

**DATA EXCHANGE**

This row shows the Exchange Requirement (ER) documents for different exchange cases within the workflow. There are cases where data exchange is required that are listed below. The detail of this data to be exchanged are presented in these ERs.

* Office of Design to Office of Contracts
* Office of Contracts to contractor

**ISSUES AND SOLUTIONS**

\*\*\*\*\*Want to finish the improved process map first\*\*\*\*\*