

### Change Order Justification

The proposal submitted by The Fillmore Group in response to Lake County RFP #16167 was an estimate based on an assessment conducted onsite in Waukegan, IL early spring 2016. This project is very similar to remodeling a 30 year old home. It was necessary to engage in the migration in order to uncover the “leaky pipes” and “bad wiring”.

The specific unanticipated challenges we have encountered were related to:

- The existing DB2 Server for VM database is rapidly reaching its 64GB limit. This was accelerated by the Interest Enhancement application change implemented over the summer. Resources were diverted to:
  - Analyzing systems-level alternatives to an archive to remove data from the production database (such as dropping indexes).
  - Trying to understand the formal archive process performed annually by a since-departed LC employee. The most recent documentation located for this archive was from 2002. Given its inherent complexity and mystery, all parties concurred after much research and discussion that attempting such an archive would be time-consuming and error-prone.
  - A mini-archive was conducted on the Finance data most impacted by the Interest Enhancement.
- Differences in security schemes between the DB2 Server for VM and DB2 for LUW databases. This was coupled with the customization Lake County has implemented in CICS authentication. It took a lot of testing, debugging, and rework to get the legacy applications on z/VSE to run against the new database.
- About 5% of the Cobol applications might have to be modified because of customizations specific to DB2 Server for VM. We continue to consult with the IBM software development lab to find a work-around that will avoid the need for application modifications.
- While the version of Query Management Facility (QMF) that runs on the mainframe functions against the new DB2 for LUW database, QMF for Windows v7.2 is out-of-service and unsupported. We will need to install new QMF for Workstation v11.1 software and migrate user objects such as queries and forms.

The good news is we have recently reached a major milestone in that most of the unit testing has been completed and we are now running on the target DB2 for z/Linux server. It took about four months from the beginning of this database migration project for the DB2 for z/Linux server installation to be completed (much longer than anticipated).

The remaining major milestones in the project are:

- Parallel Testing
- Performance Tuning
- Backup/Restore
- Disaster Recovery
- Production Cutover
- CRIMPROD/ARCHPROD Consolidation

Given the pace of Unit Testing – primarily conducted by LC – and the current utilization rate of the three consultants assigned by The Fillmore Group to this project (100%, 75%, and 50% respectively), I estimate that it will probably take through the end of May 2017 to achieve production cutover. Because this estimate is based on many factors outside of my control:

1. the ongoing pace of testing
2. cooperation by third-party vendors
3. problems that might be encountered and the resulting remediation

This is only an estimate.

Consultant	Rate	Estimated hours	Extended
Frank Fillmore	\$159/hour	480	\$76,320
Roger Midgette	\$159/hour	240	\$38,160
Suresh Duggi	\$159/hour	360	\$57,240
		Total	\$171,720.00