

***Software Development Solutions***

Nevada Bureau of Mines and Geology (NBMG) Project Background

The Nevada Bureau of Mines and Geology (NBMG) is an office of up to 10 personnel that all work on state geo-mapping cartography projects. All mapping work is completed using the ESRI geographical information services (GIS) software. All funding for their business is on a contract/Grant bid process. The University of Nevada, Reno initially funds all work projects in order to cover salaries and project costs. Billing is then provided to project owners/Grant holders in order to reimburse the initial upfront loan from the college. Each GIS cartographer will have multiple projects to complete and each project can have multiple cartographers working on the project. All time completed on each project is currently tracked manually, in a folder which will contain the *date worked*, *who worked the project*, *the amount of time worked* (Minimum increment is .25 hrs.), followed by a description of what work was performed for that period.

Some projects will be combined under an umbrella grant but will have separate Work Order No.’s assigned (WO# - is the numerical tracking number for the project). Projects are tracked based on a percent complete compared to grant initial estimated budget amount. The remaining amount is tracked and occasionally a grant is depleted so remaining work needs to be tracked under the WO# but billed to a secondary account.

In addition to tracking regular work time, the system will also need to be able to track holiday, sick and other administrative times. As workers enter their times, they should have a review window that is either updated during entry or a report that they can run after their daily data time entry is completed in order to verify that entered times are correct. Entered times should only be changed as a last resort so any corrects should be completed as another line entry. (i.e., if a cartographer worked 3.5 hours on a project and they accidently entered that time as 6.5 hrs., instead of correcting the 6.5 to 3.5, the cartographer would need to enter another line of -3.0 hrs. The reason for this is times are summarized in a report that the supervisor uses to bill. If billing is completed and the cartographer corrects the entry, an over bill can occur. By entering a negative amount, the next billing cycle will take account of the correction and there will be a data trail for state audit requirements.

An excel spreadsheet was created in order to track this information while a better automated system can be developed. There are additional codes on the spreadsheet that can be discussed in greater detail. Some codes were created in order to utilize pivot table reporting.