2018 MINE MAP GRANT DETAIL BUDGET FORM EXAMPLE

Here is an example Detail Budget Form and explanation to help the applicants plan for the correct funding to complete their project goals. This example shows "Example University" applying for funding in all three Project Categories: Scanning &Cataloging, Georeferencing, and Vectorizing. However, if an applicant is only applying for one or two categories, they would simply leave the pages of the categories they are not applying for blank.

It may be easier to plan just one semester or year at a time, then multiply your numbers by the number of semesters or years you wish to participate in the project. Remember all work must be completed by 6/30/2021. In this example, we will determine what resources and work can be completed during one year, then multiple those numbers by three years.

We downloaded the Excel version of the form, so the form will auto-calculate many of the values for us. You may use a paper copy, but please check your math, any application that has incomplete or incorrect calculations in the Detail Budget Form may be rejected. In the Excel form, only the fields highlighted in yellow can edited, the remaining fields will auto-calculate.

Remember these times are estimates/averages, and actual costs may vary. The MMG Program is a reimbursement for actual funds spent, so if you under-budget or over-budget this will be reflected in the amount of work completed/deliverables submitted to the DEP, and may be a consideration in future grant awards. Please use estimates that you believe your organization can actually accomplish. Organizations with more experience georeferencing historic maps and interpreting mine maps may be able to complete tasks faster than these example estimates, while organizations new to these tasks may take longer.

The first page is the "Salary Info" page, we will enter the Salaries and Benefits per hour of each of our employee types. Remember these rates should be an anticipated average rate over the next 3 years, so take future raises into consideration. Example University has the following staff that will work on this project: 1) The Professor who will act as the principal investigator and oversee the project, we filled in his/her salary and benefits per hour under the Manager row; 2) A Lab Manager to run the day-to-day operations of the project, who meets the education and experience requirements stated in the application to perform quality control work of the GIS tasks. We filled in his/her salary and benefits per hour under the Technicians row; 3) Four undergraduate interns that will work on this project as work-studies; 4) Two graduate interns that will work on the more complex GIS aspects of this project; 5) Another professor from the mining engineer program that will be available to help train the staff in understanding and interpreting the mine maps (*Preference Points). We filled in his/her salary and benefits per hour under the custom fill row we will call "Mining Engineer". Also on this page we indicate the Indirect Cost Rate of Salary and Benefits for the university at 45%.

Fixed Number of Administrative and Training Hours:

The Manager will be budgeted a full day (8 hours) once per year for business meetings, plus 3 hours per month for administrating work, plus provide 12 hours per year in training. This is spread out across all three Project Categories.

> (8 hours + (3 hours x 12 months)) x 3 years = 132 Administrative Hours
> 132 hours / 3 project categories = 44 Administrative Hours per Category
>
> 12 hours x 3 years = 36 Training Hours
> 36 hours / 3 project categories = 12 Training Hours per Category

The Mining Engineer will be budgeted for a 2-hour training presentation each semester for 3 years, to help other employees interpret maps, mostly during Cataloging, so these hours are added to the Scanning & Cataloging category.

> 2 hours x 3 semesters x 3 years = 18 Training Hours in Scanning & Cataloging

The Technician will be budgeted for a full day (8 hours) once per month for preparing reports and invoices and 8 hours per month for communications with grantor, time keeping, and equipment maintenance. This is spread out across all three Project Categories.

> (8 hours + 8 hours) x 12 months x 3 years = 576 Administrative Hours
> 576 hours / 3 project categories = 192 Administrative Hours per Category

The Technician will be budgeted to give 40 hours of training to undergrad interns and 40 hours of training to grad interns each year spread out in the different project categories as needed.

> (40 hours + 40 hours) x 3 years = 240 Training Hours
> 240 hours / 3 project categories = 80 Training Hours per Category

Each intern will be budgeted to receive an average of 20 hours over a year to be trained in the different categories that particular intern will be working (e.g. they may receive 12 hours of map interpreting and scanning training in the fall semester, 6 hours of georeferencing training in the spring, and a 2-hour refresher training in the summer). Since undergrad and grad interns will be working in all three categories and staff turnover with replacement training needs are unpredictable, these hours will be spread out across all three Project Categories.

> 20 hours x 4 undergrad interns x 3 years = 240 Training Hours
> 240 hours / 3 project categories = 80 Training Hours per Category
>
> 20 hours x 2 grad interns x 3 years = 120 Training Hours
> 120 hours / 3 project categories = 40 Training Hours per Category

Map Processing Hours in Each Project Category:

Now we should figure out how many hours each employee type will be available to pool from for each Project Category. Alternatively, you can figure out how much work you would like to complete, then determine how much staff you need to hire.

Each undergrad intern can work 10 hours per week for the 15 weeks of Spring and 15 weeks of Fall semesters and 40 hours per week over the 12 weeks of summer, taking all breaks off.

(10 hours x (15 weeks + 15 weeks) + (40 hours x 12 weeks)) x 3 years x 4 interns = 9,360 Hours

Each grad intern can work 20 hours per week for the 15 weeks of Spring and 15 weeks of Fall semesters and 40 hours per week over the 12 weeks of summer, taking all breaks off.

(20 hours x (15 weeks + 15 weeks) + (40 hours x 12 weeks)) x 3 years x 2 interns = 6,480 Hours

The Technician can work 40 hours per week for 48 weeks a year (assumes 4 weeks paid time off, which should be addressed in benefits and not in salary hours). However, the Technician does have other job duties, so this should be looked at as a maximum and leave time for those other duties.

40 hours x 48 weeks x 3 years = 5,760 Hours

We will use the suggested times to estimate our work output, you are free to use times higher or lower depending on your organization's and staff's experience.

The average Scanning Hours per Map (0.75 hours total) will be budgeted as follows:

0.25 Hours: Map Scanning by Undergrad Interns
0.25 Hours: Map Cataloging by Undergrad Interns
0.25 Hours: Q/C Processing by the Technician

The average Georeferencing Hours per Map (0.25 hours per map to determine if georeferencable, and 75% of those maps will take an average 1.5 hours to georeference and Q/C) will be budgeted as follows:

0.25 Hours: Map Evaluation by Undergrad or Grad Interns
1.50 Hours: Georeferencing by Undergrad Interns
1.00 Hours: Georeferencing by Grad Interns
        (if the Undergrad and Grad Interns georeference the same amount of maps the overall
        average will be 1.25 Hours, but it's ok if they don't end up even)
0.25 Hours: Q/C Processing by the Technician

The average Vectorizing Hours per 7.5' Quad Spatial Extent Equivalent per coal seam (300 hours total) will be budgeted as follows:

100 Hours: Map Evaluation (Determining the "best" map to be vectorized) by Grad Interns
 35 Hours: Map Compilation (organizing maps and building a Mosaic dataset) by Grad Interns
135 Hours: Map Vectorizing by Undergrad Interns
 30 Hours: Q/C Processing by the Technician

Now, all we have to do is determine how much work we want to do in each category. We can enter in these maps or spatial extents to be processed on each Project Category tab and look at the Summary page to see how that is affecting the total hours of each employee type to make sure we are not going over our available hours.

We will start with the Vectorizing Project Category since it is the most complex. We would like to vectorize an area in the eastern part of the Bituminous Coal Field where 4 coal seams are predominant; Upper Freeport, Lower Freeport, Upper Kittanning, and Lower Kittanning seams. We would like to set a goal of completing an area within a boundary of a 7.5' Quadrangle (~56 square miles) each semester. We will use the breakdown of times and which employee type would perform which task from the previous page and apply to our goal and enter these values into our spreadsheet:

    100 Map Evaluation Hours X 4 coal seams X 9 semesters = 3,600 Hours
    35 Map Compilation Hours X 4 coal seams X 9 semesters = 1,260 Hours
    135 Map Vectorizing Hours X 4 coal seams X 9 semesters = 4,860 Hours
    30 Q/C Processing Hours X 4 coal seams X 9 semesters = 1,080 Hours
    56 sq mi X 9 semesters = 504 sq mi

Next, we will complete the Scanning Project Category. After consulting with the DEP to determine the limited availability of map inventories that need scanned, we identified approximately 1000 maps from the DEP New Stanton Office that will need scanned, but will scan maps from any repository the DEP deems necessary. We will enter the times per map for each employee type determined on the previous page, then enter to total number of maps.

Next, we will complete the Georeferencing Project Category. After consulting with the DEP to determine the availability of map inventories, we determined that there are tens of thousands of maps that need georeferenced spread out through multiple collections, so we will accept any available inventory from the DEP. We will enter the times per map for each employee type determined on the previous page. We want to set a number of maps to process so we use up all the remaining hours available for our Grad Interns. If we enter into the spreadsheet they will evaluate 1,500 maps and georeference 1,125 maps, then they check the Summary page, we see that we budgeted for exactly their available 6,480 hours. Next, for the Undergrad Interns we will enter they will evaluate 2,740 maps and georeference 2,050 maps, then they check the Summary page, we see that we budgeted for exactly their available 9,360 hours. The Technician will perform Q/C Process on all 3,175 maps the interns will georeference.

For **Equipment** needs, Example University already has a scanner (*Preference Points), but will need new computers capable to perform the grant work. An itemized budget will be entered for 7 dual monitor workstations licensed with ArcGIS for Desktop.

For **Travel** needs, no overnight accommodations are anticipated, but mileage reimbursement for business meetings and maps transportation will be needed. We are 25 miles from a DEP office and plan to visit for meetings and to pick up maps 4 times a year. We will use the current federal rate, but that is subject to change.

    25 miles X 2 (roundtrip) X 4 visits X 3 years = 600 miles

We now check the Summary page. We will independently double check the calculations in each field to make sure the excel formulas are correct before we submit our application.

MINE MAP GRANT DETAIL BUDGET FORM

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GRANTEE: EXAMPLE UNIVERSITY

SALARIES, BENEFITS, & INDIRECT COSTS INFORMATION

Employee Type	Wages per Hour	Benefit Costs per Hour	Direct Costs per Hour	Indirect Costs per Hour	Total Extended Costs per Hour
Manager	$50.00	$12.00	$62.00	$27.90	$89.90
Supervisors			$0.00	$0.00	$0.00
Technicians	$25.00	$10.00	$35.00	$15.75	$50.75
Interns - Undergraduate	$8.00	$0.00	$8.00	$3.60	$11.60
Interns - Graduate	$15.00	$5.00	$20.00	$9.00	$29.00
Mining Engineer	$60.00	$12.00	$72.00	$32.40	$104.40
N/A			$0.00	$0.00	$0.00
N/A			$0.00	$0.00	$0.00
N/A			$0.00	$0.00	$0.00

Indirect Cost Rate = 0.45 (Enter Percentage as a Decimal)

INSTRUCTIONS

Values can only be entered into fields highlighted in yellow. Enter all 'Wages per Hour' and 'Benefit Costs per Hour' for each employee type and the Indirect Cost Rate on this page. Anticipate the average wages over the grant period. On subsequent pages, enter estimated time and target number of items to be completed in each Project Category. Enter Equipment Cost and Travel Expenses on relative pages. Summary sheet and all other fields will be calculated and auto-populated with spreadsheet formulas, however it is the Applicant's responsibility to check the accuracy of each field. Applications with with incorrect calculations in their budget documents may be rejected.

NOTE: Indirect Cost Rate can not exceed 45%.

GRANTEE: **EXAMPLE UNIVERSITY**

Project Category: **Scanning & Cataloging**

Specify Number of Maps to be Processed: 1000

Specify Prefered Map Collection(s)[3]: Maps from DEP New Stanton Office or available inventory

Work Description: Scanning mine maps and cataloging in PHUMMIS database.

Suggested Processing Time: 0.75 hours per map.

Grantee Employee Type	Hours Per Map Worked[1]			Number of Maps[2]	Total Map Processing Hours	Training Hours	Administrative Hours	Total Hours	Total Direct Cost
	Map Scanning	Map Cataloging	Q/C Processing						
Manager					0.00	12.00	44.00	56.00	$3,472.00
Supervisors					0.00			0.00	$0.00
Technicians			0.25	1000	250.00	80.00	192.00	522.00	$18,270.00
Interns - Undergraduate	0.25	0.25		1000	500.00	80.00		580.00	$4,640.00
Interns - Graduate					0.00	40.00		40.00	$800.00
Mining Engineer					0.00	18.00		18.00	$1,296.00
N/A					0.00			0.00	$0.00
N/A					0.00			0.00	$0.00
N/A					0.00			0.00	$0.00
Totals:					**750.00**	**230.00**	**236.00**	**1216.00**	**$28,478.00**

Indircect Cost Rate:	0.45	**Indirect Cost:**	$12,815.10
		Total Extended Cost with Indirects:	$41,293.10
		Estimated Total Cost per Map Processed:	$41.2931

INSTRUCTIONS

[1]Enter all times in 15 minute (0.25 hour) increments on a per map basis.

[2]Enter amount of maps that each employee type will work with. Total of this column may exceed total number of maps processed as an Intern may scan one map, but a Technician cataloged it.

[3] Applicant may request to work with a specific map collection, but DEP will assigned actual maps to be worked with depending on available inventories of maps. If Applicant has their own map collection or control of a map collection they are requesting funds to process, specify here.

Enter all times in 15 minute (0.25 hour) increments. Use the Map Scanning work type only for time directly involving the scanning of maps. Use the Cataloging work type only for time directly involving the recording of map metadata and entering it into PHUMMIS. Use the Quality Control (Q/C) Procressing work type only for time reviewing and correcting the Map Scanning and Cataloging work of others. Use the Training work type only for time giving or recieving training on how to perform Map Scanning and Cataloging work. Use the Administrative work type only for time of direct management, supervision, and other costs associated with a Project Category. Examples of Administrative work include; invoicing, reporting, general communications between the grantee and DEP, time keeping, and equipment calibration and cleaning.

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GRANTEE:	**EXAMPLE UNIVERSITY**
Project Category:	**Georeferencing**

Specify # of Maps to be Evaluated:	4240	Specify # of Maps to be Georeferenced:	3125

Specify Prefered Map Collection(s)[3]:	Any available inventory

Work Description:

Evaluating mine maps to determine if it is adequate for georeferencing, georeferencing digital map image in GIS, and updating PHUMMIS database.

Suggested Processing Time: 0.25 hours per map to evaluated if it could be georeferenced. Suggested budgeting of 75% of evaluated maps can be georeferenced. 1.5 hours per map to georeference.

Grantee Employee Type	Hours Per Map Worked[1]			Number of Maps Evaluated[2]	Number of Maps Georeferenced[2]	Total Map Processing Hours	Training Hours	Administrative Hours	Total Hours	Total Direct Cost
	Map Evaluation	Georeferencing	Q/C Processing							
Manager						0.00	12.00	44.00	56.00	$3,472.00
Supervisors						0.00			0.00	$0.00
Technicians			0.25		3125	781.25	80.00	192.00	1053.25	$36,863.75
Interns - Undergraduate	0.25	1.50		2740	2050	3760.00	80.00		3840.00	$30,720.00
Interns - Graduate	0.25	1.00		1500	1125	1500.00	40.00		1540.00	$30,800.00
Mining Engineer						0.00			0.00	$0.00
N/A						0.00			0.00	$0.00
N/A						0.00			0.00	$0.00
N/A						0.00			0.00	$0.00
Totals:						6041.25	212.00	236.00	6489.25	$101,855.75

Indircect Cost Rate:	0.45	**Indirect Cost:**	$45,835.09
		Total Extended Cost with Indirects:	$147,690.84
		Estimated Total Cost per Map Processed (Georeferenced):	$47.2611

INSTRUCTIONS

[1]Enter all times in 15 minute (0.25 hour) increments on a per map basis.

[2]Enter amount of maps that each employee type will work with. Total of this column may exceed total number of maps processed as an Intern may georeference one map, but a Technician performed quality control on it.

[3] Applicant may request to work with a specific map collection, but DEP will assigned actual maps to be worked with depending on available inventories of maps. If Applicant has their own map collection or control of a map collection they are requesting funds to process, specify here.

Enter all times in 15 minute (0.25 hour) increments. Use the Map Evaluation work type only for time reviewing maps to determine whether they have enough surface features on them in order to be georeferenced. Use the Georeferencing work type only for time directly georeferencing the mine maps. Use the Quality Control (Q/C) Procressing work type only for time reviewing and correcting the Georeferencing work of others. Use the Training work type only for time giving or recieving training on how to perform Georeferencing work. Use the Administrative work type only for time of management, supervision and other costs associated with a Project Category. Examples of Administrative work include; invoicing, reporting, general communications between the grantee and DEP, time keeping, and equipment calibration and cleaning. Note: Computing time of computers while a person is not interfacing with the computer (e.g. using software to compress TIFFs to MrSIDs) is non-billable time.

MINE MAP GRANT DETAIL BUDGET FORM

GRANTEE: **EXAMPLE UNIVERSITY**

Project Category: **Vectorizing**

Specify Spatial Extent to be Processed[2]: 7.5' Quads in the eastern Bituminous Coal Field X 9

Estimated Square Miles of Spatial Extent: 504

# of Predominant Coal Seams in Spatial Extent: 4

Work Description: Determining the "best" maps in a spatail extent to use for vectorization, vectorizing features on georeferenced mine maps, performing quality control, and updating PHUMMIS database.

Suggested Processing Time: 300 total hours per spatial extent equivalent of a 7.5' Quadrangles (~56 squared miles) per predominate coal seam. Suggested budgeting of 45% of the time to evalute and compile which maps are "best" for a given area (eliminating duplicate mapping), 45% of the time to vectorize features, and 10% performing quality control.

Employee Type	Map Evaluation	Map Compilation (e.g. Build Mosaic)	Map Vectorizing	Q/C Processing	Total Map Processing Hours	Training Hours	Administrative Hours	Total Hours	Total Direct Cost
Manager					0.00	12.00	44.00	56.00	$3,472.00
Supervisors					0.00			0.00	$0.00
Technicians				1080.00	1080.00	80.00	192.00	1352.00	$47,320.00
Interns - Undergraduate			4860.00		4860.00	80.00		4940.00	$39,520.00
Interns - Graduate	3600.00	1260.00			4860.00	40.00		4900.00	$98,000.00
Mining Engineer					0.00			0.00	$0.00
N/A					0.00			0.00	$0.00
N/A					0.00			0.00	$0.00
N/A					0.00			0.00	$0.00
Totals:					10800.00	212.00	236.00	11248.00	$188,312.00

Total Hours over Grant Period Worked[1]

Indircect Cost Rate: 0.45	**Indirect Cost:** $84,740.40
	Total Extended Cost with Indirects: $273,052.40
Estimated Total Cost per 7.5' Quadrangles spatial extent equivalent (~56 sq miles) per seam:	$7,584.79

INSTRUCTIONS

[1]Enter all times in 15 minute (0.25 hour) increments for the entire length of the grant period.

[2]Applicant may request to work within a specific spatial extent, but DEP will assigned actual spatial extent to be worked with depending on available inventories of maps.

Enter all times in 15 minute (0.25 hour) increments. Use the Map Evaluation work type only for time reviewing maps in a given spatial extent and choosing the "best" ones to be vectorized. Use the Map Compilation work type only for time organizing the "best" chosen maps and preparing for their vectorization in a GIS (e.g. the time to build a mosaic dataset and adjust each maps viewable footprint in GIS). Use the Vectorizing work type only for time directly vectorizing features on the mine maps. Use the Quality Control (Q/C) Procressing work type only for time reviewing and correcting the Vectorizing work of others. Use the Training work type only for time giving or recieving training on how to perform Vectorizing work. Use the Administrative work type only for time of management, supervision and other costs associated with a Project Category. Examples of Administrative work include; invoicing, reporting, general communications between the grantee and DEP, time keeping, and equipment calibration and cleaning.

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MINE MAP GRANT DETAIL BUDGET FORM

GRANTEE: **EXAMPLE UNIVERSITY**
Project Category: **Equipment, Supplies, Materials**
Work Description: Examples of items most typically purchased are scanners, computer, software, electronic storage devices, office supplies and service/maintenance agreements for equipment.

Equipment, Supplies, Materials (Items Over $5,000 each)	Cost
1	
2	
3	
4	
5	
6	
7	
8	
Total of items over $5,000:	$0.00

Equipment, Supplies, Materials (Items Under $5,000 each)	Cost
1 Desktop Computers w/ Windows 10 @ $1800 each X 7	$12,600.00
2 LED 23 inch Monitiors @ $200 each X 14	$2,800.00
3 ArcGIS for Desktop v10.5, software license @ $1400 each X 7	$9,800.00
4 ArcGIS for Desktop software maintenance @ $400 X 2 additional years X 7	$5,600.00
5	
6	
7	
8	
Total of items under $5,000:	$30,800.00

Grand Total:	$30,800.00

INSTRUCTIONS
List all equipment that cost $5,000 or more per unit and all equipment, supplies and materials that cost less than $5,000 per unit seperately. Combined cost of equipment, materials and supplies may not exceed 20 percent of the total grant request amount.

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MINE MAP GRANT DETAIL BUDGET FORM

GRANTEE:	**EXAMPLE UNIVERSITY**
Project Category:	**Travel Reimbrusement**
Work Description:	Applicants should plan appropriately for the cost of traveling to business meetings and map/ equipment transport relative to Mine Map Grant work.

Mileage Reimubrusement

Destination	Miles Traveled	Reimbruse-ment Rate	Total Cost
DEP Offices	600.0	$0.5350	$321.00
			$0.00
			$0.00
			$0.00
Totals:			**$321.00**

Hotel and Subsistence

Destination	Hotel Costs per Day	Subsistence Costs per Day	#of Nights	# of Travelers	Total Cost
					$0.00
					$0.00
					$0.00
					$0.00
Totals:					**$0.00**

Total Travel Costs:	**$321.00**

INSTRUCTIONS

Travel expenses incurred under the MMG are reimbursed according to the provisions of the Commonwealth Travel Manual. Only the travel cost of traveling to business meetings and map/equipment transportation related to the MMG will be covered. All travel costs must be pre-approved by DEP before travel occurs, cost inclusion in this Budget Detail Form of the MMG Application does not constitute pre-approval.
NOTE: The Mine Map Grant Program will no longer cover the cost of conference attendance fees.

MINE MAP GRANT DETAIL BUDGET SUMMARY

GRANTEE: EXAMPLE UNIVERSITY

EXPENSE CATEGORY	Scanning Mine Maps	Georeference Mine Maps	Vectorize Mine Maps	Total
Items Proposed to be Processed[3]	1000	3125	36	
Map Processing Salaries and Benefits	$12,750.00	$87,423.75	$173,880.00	**$274,053.75**
Training[1]	$6,280.00	$4,984.00	$4,984.00	**$16,248.00**
Administrative[1]	$9,448.00	$9,448.00	$9,448.00	**$28,344.00**
Direct Cost	$28,478.00	$101,855.75	$188,312.00	**$318,645.75**
Indirect Cost	$12,815.10	$45,835.09	$84,740.40	**$143,390.59**
Extended Cost	$41,293.10	$147,690.84	$273,052.40	**$462,036.34**
Cost Per Item	**$41.2931**	**$47.2611**	**$7,584.79**	

Equipment, Supplies, and Materials[2]	$30,800.00	Indirect Rate:	45.0%
Travel Reimbrusement	$321.00		

TOTAL AMOUNT OF GRANT REQUEST: **$493,157.34**

[1] Total Administrative Cost (including Training) may not exceed 15 percent of the total amount of the grant request.

Total Administrative & Training Cost:	$44,592.00	Percent:	**9.0%**

[2] Equipment, Supplies, and Materials Cost may not exceed 20 percent of the total amount of the grant request.

Equipment Cost:	$30,800.00	Percent:	**6.2%**

[3] For Vectorize Mine Maps, Items refer to the approximate spatial extent of a 7.5' Quadrangle or 56 square miles per coal seam.

Employee Type	Total Hours	Hours per Year
Manager	168.00	56.00
Supervisors	0.00	0.00
Technicians	2927.25	975.75
Interns - Undergraduate	9360.00	3120.00
Interns - Graduate	6480.00	2160.00
Mining Engineer	18.00	6.00
N/A	0.00	0.00
N/A	0.00	0.00
N/A	0.00	0.00